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ORIGINAL ARTICLES.

INTERESTING FACTS IN NERVOUS DISEASE.

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DOUBTING the truth of the general opinion that epileptics rarely die of epilepsy, Worchester undertook some statistical investigations regarding it; for which purpose he examined the records of the Michigan Asylum for the Insane, for 28 years, as well as those of 55 other asylums, 15 of which give statistics for their entire periods of operation. The results show that from 20 to 30 per cent. of the epileptic inmates die of epilepsy, the rate being often much nearer the latter figure. This is a much larger number than the total death rates of the individual asylums, and shows, further, that not only is epilepsy a very fatal disease, but that many more epileptics die from it than from all other causes put together. As to whether conclusions thus drawn are applicable to patients outside of asylums, Worchester admits that the inmates of such institutions are probably cases of more than average severity, but claims also that they are more favorably situated as regards treatment and security against accidents, and he believes that the figures represent fairly the facts for cases of considerable severity.

Some years ago, Bressler called attention to "hysterical fever," an affection which is not, he says, described by authors generally, but of which he has seen a number of cases; namely, an elevation of temperature lasting from a few hours to several weeks, sometimes with intermissions, occurring in neurotic individuals, and associated with symptoms of a hysterical character. We know nothing as to its anatomical changes, these being probably the same as those which operate in hysteria, plus an influence acting on the thermic center. The disease usually begins with chilliness, anorexia, constipation, coated tongue, headache, elevated temperature, etc. The mind is unusually bright, the special senses are acute, there is no delirium, no matter how severe the attack may be, the appetite is often perverted, the patient is irritable, and noises are often annoying and increase the fever. One of the most important symptoms is the vomiting, which often persistently follows the introduction of anything into the oral cavity, and the patient will sometimes go days without tasting food through fear of this. The abdomen is extremely sensitive to pressure, but, unlike peritonitis, the pain is fluctuating and there is no tympanites, while the one is further distinguished from the other by the constant and characteristic ovarian tenderness, the variability of temperature, etc. The pulse is usually increased in frequency. Neuralgia of the bowels, insomnia, and hysterical asthma are seen exceptionally. The temperature is peculiar, generally attaining a high degree early in the disease, and continuing thus, or being subject to all sorts of sudden variations. Very little wasting of the body takes place. The treatment is the same as for hysteria, with the addition of some febrifuge.

The neuritis existing in the puerperal state differs in several important characteristics from the ordinary type. This form, which consists principally of pain and paralysis, with muscular atrophy, involves most frequently the lower limbs, and has often been ascribed to pressure on the pelvic nerves by the fetal head. Moebius attributes puerperal paralysis to infection, and shows the analogy to paralyses following erysipelas or typhoid, considering the latter due to parenchymatous and peripheral change. It often develops many days after a simple labor, and amid symptoms indicating puerperal infection. It frequently happens that paralyses of this kind limit themselves to the group of muscles into three groups; infectious, traumatic, and neuritic by propagation. Of the first, we find one class in which the paralysis and pain extend to all four extremities and trunk; of the second, the want of power is localized, infecting only the upper or lower limb. Of the general neuritis only three cases have been reported.

The constitutional symptoms are similar to those of ordinary neuritis, persisting vomiting seeming to be somewhat characteristic. The onset of the paresis is announced by troubles of sensation, formications, pinching of limbs, and increasing muscular debility, particularly attacking the extensors of the hand and foot. The walk is peculiar, a light passing hyper- or hypo-esthesia may be present. The muscular masses, tendons, and nerve trunks are tender on pressure, independently of spontaneous pains. These symptoms amend when the period of actual paresis comes on. Tendon reflexes are abolished, and reactions of degeneration have been witnessed in the atrophied muscles. In one case death took place in three months, in a condition of general infection. The muscles of the trunk and abdomen had been attacked as well as the sphincters. The spinal column had also been affected. The disease is very difficult to diagnosticate from "acute central myelitis." The fact of its appearing after childbirth, or with symptoms of infection, will aid in the diagnosis. Charcot calls attention to a peculiar amnesia for recent events, combined with an otherwise sound condition of mind. The most successful treatment has been found in electricity, and the disease tends toward recovery in from eighteen months to two years.

The tendon reflex is often erroneously reported absent in health, but if carefully tested by Jendrassik's method —*i.e.*, the "arm tension"—and is not found, Buzzard believes the condition pathological. The absence of knee-jerk signifies organic disease of ether muscle, nerve, or spinal cord at its lumbar enlargement, though as a temporary condition it may follow an epileptic fit, an apoplectic seizure, or certain narcotic poisons. Absent knee-jerk due to disease of the muscle is seen in pseudo-hypertrophic paralysis, occasionally in Thomsen's disease, and in cases of the hereditary form of progressive muscular atrophy. Loss of knee-jerk due to disease of the nerve—peripheral neuritis—is seen in diphtheritic paralysis, where it often long persists, in alcoholic neuritis, in diabetes—due often to a neuritis, and in lead-poisoning. In spinal meningitis with involvement and compression of the anterior or posterior nerves at the point of exit; and in rheumatic inflammation of the sheaths of the nerves it is often lost. Among acute diseases of the cord producing loss of knee-jerk when the lumbar enlargement is involved are transverse myelitis, anterior poliomyelitis, compression myelitis, and softening of the cord; and among chronic disorders are tabes

141399

dorsalis, insular sclerosis, tumor of the cord, and chronic atrophy from poliomyelitis.

Anterior poliomyelitis shares with disease of the anterior crural nerve the loss of the reflex, but is distinguished from it by the wasting and the absence of sensory disturbance. The return of the knee-jerk renders the prognosis favorable, though it may continue absent after other symptoms have disappeared. Tabes is distinguished from either of these two affections by the fact that though the knee-jerk is wanting the muscles contract perfectly when struck, this being a proof that the cells of the anterior horns are not diseased. The severe pains, also, are rather in the region of the sciatic than in that of the anterior crural nerve. The return of the patellar reflex in cases diagnosed as tabes renders it almost certain that the diagnosis was incorrect; while the very rare persistence from the outset is probably due to a not complete degeneration of the posterior columns. Transverse myelitis from Pott's disease produces loss of knee-jerk when the lesion is situated at the lumbar enlargement; otherwise the reflex is enormously increased. Loss of knee-jerk with the presence of ankle clonus in the same limb renders the existence of insular sclerosis very probable. In spinal progressive muscular atrophy the knee-jerk is absent if the quadratus is greatly atrophied; otherwise it is frequently retained or even exaggerated, this being a certain proof in any given case that the disease was primarily spinal and not myopathic. An exaggeration indicates that some sclerosis of the lateral tracts has accompanied the disease of the large ganglion cells. Increased knee-jerk and ankle-clonus are seen whenever anything removes the control of the higher centers. Thus, epilepsy, which temporarily exhausts the nerve cells of the cortex, produces an ankle-clonus which lasts a few moments.

Descending lateral sclerosis, secondary to cortical lesions, produces ankle-clonus in the paralyzed limb. So, also, spastic paraplegia, with its greatly increased knee-jerk, is due to disease of the antero-lateral columns, with which is usually combined some affection of the anterior gray matter, producing atrophy. Carefully to be distinguished from these last affections, as having a much more favorable prognosis, are localized myelitis with the symptoms of lateral sclerosis, compression myelitis from Pott's disease, and the excessive knee-jerk and ankle-clonus which appear a few days after an intra-cranial lesion. The existence of increased wrist-jerk in these conditions is, however, a much more unfavorable sign. In neurasthenic states, including functional paraplegias, the knee-jerk is often increased and ankle clonus present. The association of exaggerated patellar reflex with absent plantar reflex in paraplegia, without sensory disturbance, renders a functional affection probable. This is particularly the case if the wrist-jerk be as much increased as the knee-jerk, while no loss of power in the arms is complained of.

The increased predominance of the nervous temperament seen growing yearly in Americans is due to the insatiate demand of an enfeebled nervous system for some excitant which shall enable it to triumph over its weakness; this is the cause of the increased consumption of stimulants, narcotics, and hypnotics of recent years. The three most important factors in the formation of drug habits are pain, exhaustion, and insomnia, and these may often be met with aside from any organic disease, but are frequently the outcome of an impaired or unstable nervous system, and of improper methods of living. Baker concludes: 1. That the facility with which nervous processes repeat themselves constitutes the organic basis of habit, the nerve-cells becoming fixed in the direction in which they are constantly exercised. 2. The continued use of drugs—notably alcohol, chloral, and opium, may establish an abnormal condition of the nervous centers, which in itself is a constantly recurring plea for their habitual use. 3. Drugs for the relief of these conditions should be prescribed with care and with due regard to the danger of subsequent habitual use. 4. The treatment of drug habituation is unsatisfactory unless all the surroundings of the patient during treatment can be absolutely controlled by the physician in charge. Relapses are quite common.

The difficulty of obtaining reliable preparations of cannabis indica is one of the chief obstacles to its use. Reynolds has had exceptional opportunities to get good cannabis indica, and the results of his administration of the drug during a number of years lead him to believe that when pure and carefully administered it is one of the most valuable remedies we possess. Some of its most remarkably valuable results are to be found in curious conditions of the mind. For example, in senile insomnia with wandering; where an elderly person, probably with brain softening in the "delirium form," is fidgety at night, goes to bed, gets up again, thinks he has some appointment to keep, and must dress himself and go out to keep it; but it is quite radical during the day, with its stimuli of real occupations. In this class of cases nothing is comparable in utility to a moderate dose of Indian hemp; one-quarter to one-third of a grain of the extract given at night. It has been absolutely successful for months, and, indeed, years, without any increase of the dose.

In alcoholic delirium it is very uncertain, in melancholia it is sometimes of service, in mania it is worse than useless, either in the chronic or in the acute form. In the occasional night restlessness of patients with general paralysis it has proved of eminent utility. In almost all painful maladies, like neuralgias and migraine, it is the most useful of drugs. The lightning pains of ataxic patients, and the multiform miseries of tingling, formication, and numbness, so common in the limbs of gouty people, are relieved by it. On the other hand, it has proved useless in sciatica, myodynia, gastrodynia, and enteralgia. The drug should always be obtained from the same source if possible, and that a minimum dose should be given to begin with, and that the dose should be very gradually and cautiously increased. Toxic effects were caused by one-fourth but never by one-fifth of a grain of the extract, therefore one-fifth is a good beginning dose for an adult, one-tenth of a grain for a child.

The best form is the tincture, in drops, on a small piece of sugar or bread; if given in a mixture it is apt to separate and give uneven doses. Pills often become hard and insoluble, and their strength cannot be so readily and so gradually increased. For adults, where a gradually increasing dose is required, a tincture with a strength of one grain of the extract in ten drops of the tincture is useful. Two drops of such a tincture may be used, repeated in not less than four to six hours, and gradually increased by one drop every third or fourth day, until relief is obtained or the drug proved useless.

The report of the Therapeutic Committee of the British Medical Association on the use of sulphonal, paraldehyde, and chloralamide, is a very valuable paper and is as follows: Attention being directed especially to the dose. Whether sleep is produced with certainty, how soon it comes on, and how long it continues. Dangerous or disagreeable effects produced. Whether the drug loses its effect.

The first drug reported on was sulphonal. In thirty-

two cases, twenty grains were given in eleven instances, once at night. Sleep came on in half an hour to three hours; in one case in five hours, and in another in nine hours. A second dose on the succeeding night in one case produced sleep in five minutes. Sleep lasted in four cases all night; in four cases six hours; and in three cases one or two hours. With twenty-five grains (four cases) sleep came on in two hours, and lasted six hours, or all night. With ten and fifteen grains less sleep was produced, and in a case of pneumonia (fifteen grains) there was no sleep after the drug. The few cases (seven in all) in which thirty, forty, and sixty grains were given, showed that these doses did not possess greater hypnotic effect than a dose of twenty grains; as regards disagreeable after-effects, in six out of ten cases in which twenty grains had been given, disagreeable after-effects were noted; drowsiness next day was noted six times; dizziness four times; headache and incoordination of gait, each twice. In four cases in which ten grains had been given, drowsiness was noted once; in five cases with fifteen grains, drowsiness was noted twice and giddiness twice; with twenty-five grains (four cases), drowsiness was noted twice, giddiness once, headache once. In seven cases, with thirty to sixty grains, drowsiness was noted four times, giddiness twice, headache twice, incoordination of gait and vomiting, each once. Does sulphonal lose its effect? Several cases show that a second dose on the succeeding night has greater effect than on the first night. Thus, in one case, twenty grains produced on the first night two hours' sleep, with no bad after-effects; on the second, a similar dose produced eight hours' sleep, with drowsiness, giddiness, and incoordination of gait on the following day. In some cases prolonged use of the drug appears to diminish its effect yet in several cases of neurasthenia and insomnia ten to twenty grains did not lose its effect during six months.

In reporting on paraldehyde, it was found single doses to forty to sixty minims (fourteen cases), produced sleep in five to fifteen minutes; in two cases in half an hour; in one case in an hour. In most cases the sleep was wakeful and restless, and lasted very varying times, in one case only three-quarters of an hour; in another case there was restless dozing for three hours, in another sleep for two hours; in ten cases sleep lasted from three to six hours, and in one case sleep for twelve hours. These results refer to single doses. Half a drachm every three hours produced within half an hour sleep; twenty minims every four hours for fourteen days produced better sleep at night, but not during the day. Dizziness and drowsiness were noted each once, vomiting three times, and retching and nausea each once.

In the case of chloralamide, in one case twenty grains, and in six cases thirty grains, were given in single doses. After the twenty grains, sleep came on in twenty minutes and lasted three hours, with half an hour's interval of waking; after thirty grains, sleep came on in fifteen minutes to half an hour (four cases), one to two hours (two cases). Sleep lasted all night in three cases, in two cases four or five hours, and in one case there was two hours' dozing, then an interval of wakefulness, and then two hours' sleep. No disagreeable after-effects were observed in the use of the drug.

Tyson has reported recently a series of cases of sulphonal poisoning where the kidneys were affected until the drug was withdrawn.

Hypnotics are to be recommended in acute disease, particularly fevers, where sleep is often necessary. In chronic disease there is frequently the same temporary need. In incurable diseases with pain and discomfort, in the restlessness of senility, hypnotics and narcotics—used freely in the last years of life—are almost the chief justification of our service. Often in mental disease they are, for a time, all but indispensable. In some neurotic people their occasional use can hardly be avoided. In acute nervous and mental disturbance from profound shock, full and continued doses of narcotics may dispel most threatening symptoms. The chief indications in insomnia are: to give hypnotic drugs rarely and only when other measures have failed; to use, as far as it is possible, the small doses, repeating as needed, so as to avoid the overaction or the cumulative effect of large doses, to be satisfied with the least amount of sleep that is safe, if produced by medicine; to avoid drugs as a rule, except for euthansia, when the mental condition is not such that all the after-effects can be noted; to bear in mind the fact that hypnotics given to produce sleep may increase wakefulness; to be on guard for unpleasant or toxic results, when any drug is given in sufficient dose to produce prolonged and profound sleep; to give the large dose when it is indicated; not to expect the same action or tolerance of new medicines in sensitive private patients as in hospital practice.

The advantages of spirits, wine, beer, ale, porter (including some of the so-called malt extracts), koumyss, are well known in old age, in conditions of exhaustion, fevers, and generally where a cardiac depressant must be avoided, especially if supplemented by vasomotor stimulants, like ergot, digitalis, strychnine, coca, cocaine. A glass of champagne often acts like magic in the sleeplessness of a dilated heart. But the habitual necessity of alcohol to produce sleep in brain-workers indicates the nearness of the danger-line. The disadvantages of alcohol are well known and readily guarded against. The preparations of opium are indispensable in many cases with pain, in old age, in many forms of heart disease. The bromides diminish the reflex excitability of the medulla, and are vasomotor excitants. Their best therapeutic effect, always avoiding bromidism, is obtained as hypnotics, from divided doses given through the day or evening, whether in large quantity or small. Alone, or combined with other medicines, they have a wide usefulness. The debilitating influence from them may in some cases be, partly at least, met with iron or bark. By virtue of obstructing the heart's action and producing a certain amount of muscular depression, they are not without objections for continued use, or, in some cases, occasionally.

Paraldehyde has a much less depressing action on the circulation and respiration. It is especially valuable in conditions of mental excitement, where the duration of sleep may be prolonged by adding morphine. To get a definite hypnotic effect, the dose must be increased. Its acrid taste and the disagreeable persistent odor from the breath are objections to its use, and even when largely diluted it is often objected to on the ground of its being a gastro-intestinal irritant. The temptation to its habitual use is less than in alcohol, morphine, cocaine, and chloral, the symptoms produced being tremor, confusion, impaired memory, diminished intelligence, etc.

Urethan, a mild hypnotic in doses of twenty grains, is at times useful, and may, from its ready solubility, be given hypodermically. It is without especial depressing action on the heart, except in enfeebled persons. It has, like all rather mild remedies, proved in some cases uncertain in its effects, but is useful, and ordinarily without disagreeable after-effects. Hydrobromate of hyoscine has a limited usefulness, especially in mani-

acal excitement, violent hysteria, delirium tremens, insomnia with agitation, in the insane and aged. In a certain proportion of cases there is no quieting effect from the drug, but the restlessness is increased.

Chloralamide is best given in a slightly acid solution, with spirit, or as an elixir, thereby sufficiently disguising its bitter taste. The danger from a large dose is less than from a large dose of chloral. Disagreeable after-effects are less common. Some observers value chloralamide highly, while others regard it as in no way deserving especial praise. Sulphonal is a less powerful hypnotic than chloral, with even less influence on pain, but without so much, although with slight, depressing action on the heart. From its difficult solubility, the physiological action is slowly produced; a single dose may be efficient for two successive nights, and there is risk of the cumulative effect if the dose is too often repeated. In doses of thirty grains or less it is in the main safe, although twenty grains given each night for several weeks to a girl of sixteen, produced stupor, and twenty grains, three times a day continuously to a strong male adult, caused ataxia, tremor, and mental apathy. It has been found not always certain, and in overaction with an after-effect of somnolence, fatigue, depression, lack of appetite, which, from an over-dose, may amount to semi-coma and cardiac depression. Given in doses of five grains, and repeated, if necessary, two or three times, or of ten or twenty grains, and perhaps repeated, it has proved in his hands a hypnotic of great value in producing sleep which is refreshing and natural. When care has been taken not to give it too often or in too large doses, he had never seen any untoward results from it.

Phenacetin or phenalgin may be given in wafers and compressed tablets, as a powder or with brandy. In the insomnia of overwork or nervous irritation, in febrile states, or from headache, it is a hypnotic of great value, in doses of five to ten grains, repeated if necessary. In sleeplessness of intense neuralgia, less than fifteen grains, repeated two or three times, as needed, is not likely to be effectual, the fact having been first ascertained that there is no intolerance to the drug.

POINTS IN THE TREATMENT OF CARDIAC DISEASE.

BY A. N. ELLIS, M.D.

SOME years ago Riess undertook to show the greatest difference in opinion with regard to the percussion boundaries of the heart; so much so that the expression "normal heart dulness" has no significance, unless the reader is familiar with the cardiac boundaries which the individual author adopts. Many authorities emphasize the difficulty, or even the impossibility of determining the relative cardiac dulness, owing to the vibration of the sternum during percussion. Riess has found that as a rule, no special procedure is necessary, but that with practice the determination of the actual size of the heart—*i.e.*, the relative dulness—may be determined by simple percussion, confirming his observations by numerous post-mortem examinations. One cause of the uncertainty in fixing the normal heart-boundaries is their reference to certain variable lines: as the sternal, parasternal, and mammillary lines. One line remains fixed only, and which can be properly used is the midsternal; the continuation of the linea alba up to the jugular fossa; and from this all lateral measurements should be made. Only when the sternum is deformed, as in scoliosis, should this line be abandoned. It is necessary to determine the distances from this base line in the normal condition, and as a result of his studies Riess has published two tables, each containing 100 cases, with measurements made on this principle. All being on healthy males from twenty to forty years of age. The tables show a great uniformity in the measurements of the different cases; the averages being as follows:

Distance from the jugular fossa.....	2½ inches
Distance from the middle line.	
In 3d intercostal space (left)..... ..	1.1 "
In 3d intercostal space (right).....	1.9 "
In 4th intercostal space (right).....	1.4 "
In 4th intercostal space (left).....	2.9 "

It is in cases of aortic insufficiency only, when the heart is acting forcibly, that the double aortic sound can be heard in the femoral arteries. In this class may also be placed pulsation of the liver and spleen. One condition favoring the production of pulsation of the spleen in insufficiency of the aortic valves being the presence of a febrile state with a febrile swelling of that organ. Gerhardt has also reported a case of lead colic in a patient with aortic insufficiency, where the pulsation of the spleen could only be detected while the influence of the lead persisted. In another case of lead colic with acute articular rheumatism, endo- and pericarditis, and rheumatic pneumonia, the spleen began to pulsate before the murmur in the aorta could be heard. As the patient recovered, the splenic pulsation disappeared, though distinct aorta disease remained. In how far it was the fever, and in how far the action of the lead, which aided in the production of the pulsation, must remain doubtful, though probably the fever was the principal factor. The first case proves that lead intoxication may induce pulsation of the spleen in cases of aortic insufficiency. The second case shows either that the lead and fever together without the existence of aortic disease caused the pulsation, or that aortic insufficiency existed and brought on the pulsation before a murmur became audible.

As fever and lead are, next to the valvular lesion, the commonest causes of a double tone in the femoral artery, and as it has been noticed that the majority of pregnant women also exhibit this double tone, it became interesting to discover whether a combination of pregnancy and aortic insufficiency would not produce a pulsation in the spleen; and a case soon came to the author's observation which showed that this could indeed occur. The diagnosis was confirmed by autopsy, and Gerhardt's paper contains an account of the symptoms and of the post-mortem lesions. The point of resemblance of these three factors—lead, fever, and pregnancy—which with aortic insufficiency, are capable of developing pulsation of the spleen, rests in the fact that they all produce a double tone in the femoral artery. A double tone arises here when diastole and systole of the artery occur under great rise and fall of the blood-pressure, but in what way these three agents produce this effect is not clear. It seems certain that splenic pulsation may be present without the existence of aortic disease and these concomitants; since the author has a case of tubercular empyema under observation in which the spleen can be felt to pulsate distinctly.

It is only within the last fifteen years that we have learned to appreciate fully the truth that hypertrophy of the heart is a condition to be welcomed when there is valvular lesion; that there are, in fact, no symptoms attending perfect compensation. On the same principle, when there appear symptoms of cardiac distress, we regard them as evidences of failure of the heart. We say

that "compensation has become imperfect;" that the "hypertrophy has been broken down." We have learned to understand that the symptoms formerly said to be those of valvular disease are, in reality, those of failure of the cardiac wall. But after all, failure of the heart is only an effect behind which lie a number of discoverable causes, but which are too often neglected in the physician's study of his individual cases. The most common and readily appreciated cause of failure of compensation is muscular overwork; a cause seen largely in hospital practice and among the poor in general. It is easy to understand how overstrain of the skeletal muscles induces cardiac dilatation.

Next nervous causes occupy the second place in order of frequency, of which the depressing emotions are the most serious, worry being the most common.

The different forms of imperfect blood supply form the next cause of cardiac failure. There are two well defined classes of these, which must be carefully separated; (a) impoverished condition of the blood is the agent in a large number of cases. Compensation is difficult to establish or maintain in the poor, under-fed subject of valvular disease, in whom the coarse food generates dyspepsia, and the products of this poison the blood. The cardiac wall may again be imperfectly nourished in the patient at the opposite pole of the social sphere, over-rich food. The muscular tissue of the heart in such subjects becomes fat, pale, and soft; cardiac distress increases and prevents exercise, and this, in turn, augments the digestive, assimilative, and excretory derangements. Under this same head are to be classed those cases of quiescent heart disease which have been treated by rest and nourishment to the extent of abuse. Disease of the coronary arteries is a second great cause of imperfect blood supply; death from almost complete closure of these vessels has been reported.

Intercurrent disease is another cause of cardiac failure in valvular lesions; and the author regards with special anxiety the occurrence of rheumatism or of disease of the lungs. Rheumatism of a subacute type is a common cause of disturbance of compensation in young subjects. Compensation has not, perhaps, been fully established after the occurrence of the rheumatism which first involves the heart, when another attack of the disease prostrates the bodily strength of the patient, and thus disturbs compensation, if, it does not create fresh endo- or peri-carditis. Acute and cardiac disease of the lungs operates less frequently than rheumatism, but is not uncommon. Compensation may be destroyed by the occurrence of pneumonia or bronchitis, and chronic bronchitis and emphysema, by growing worse in winter, frequently induce repeated break-downs of the diseased heart at that period of the year. There are causes peculiar to women which may disturb the compensation and produce cardiac failure, such as pregnancy, labor, parturition, lactation, and the menopause, which disturb all the physiological systems, and through these the nervous and nutrient cardiac relations.

Look for the existence of the cardiac poisons in use every day—such as tea, coffee, tobacco, and alcohol. They may all cause such distressing sensations and palpitation during indulgence in them, as to connect them definitely with the attacks: and their use is given up without much difficulty. Few more hopeless forms of cardiac dilatation than that seen in the chronic drunkard. The onset of symptoms indicative of cardiac failure may be due to increase of the valvular lesion developing suddenly or slowly, but which finally exceeds the increasing hypertrophy. The last cause of failure of the heart in chronic valvular disease is seen in the limit of the compensation—*i.e.*, not the limit of hypertrophy, but the slowly but surely advancing changes in the lungs, liver, kidneys, and even in the heart muscle itself, which at last sap the nutrition, and destroy the compensation. Judicious treatment may, for a time, restore the balance, but the end cannot be indefinitely averted, reaching the limit of compensation.

We must distinguish between the prognosis of valvular disease and that of cardiac failure. The former is chiefly concerned with the particular valve affected, and is mainly statistical in its methods. Thus it teaches, for instance, that aortic insufficiency is a more serious disease than aortic stenosis. The latter is concerned with the cause of the failure, which we must investigate in every case, for it depends on the nature of the cause in each individual under which compensation has given way whether the prognosis will be favorable, unfavorable, or doubtful.

The prognosis is comparatively favorable in cases due to (a) muscular overwork, except where there is a history of sudden aggravation of the symptoms from strain, when it may be most grave. (b) Failure of the cardiac wall from impaired general nutrition (poverty, anemia, dyspepsia, etc.), but severe hemorrhage may thus prove fatal. (c) Toxic causes, except alcoholism. (d) Previously misapplied treatment, routine treatment, especially by rest and tonics, irrespective of the cause.

The prognosis is comparatively unfavorable in cases of failure due to (a) impaired local nutrition—*i.e.*, vascular disease (disease of the root of the aorta and of the coronary arteries, syphilitic, degenerative, etc.). (b) Intercurrent rheumatism, especially in young subjects, and intercurrent acute pulmonary disease. (c) The limit of pulsation having been reached. Prognosis is uncertain and obscure in cases of failure due to (a) nervous causes, which are often beyond our control. (b) Aggravation of the original valvular lesion; the prognosis depending on the extent of the new lesion, and on fresh compensation. (c) Climacteric causes, especially uncertain in pregnancy and the post-partum state. (d) Undiscoverable causes.

Do not treat cardiac disease without sufficient evidence that the treatment directed to the heart is required. And if the heart is really failing, do not apply treatment in a routine fashion. As the cardiac failure is only the effect, the rational treatment is to discover and treat the cause. This is more laborious and troublesome, but cannot fail to be the most successful, giving us an extensive choice of hygienic and therapeutic measures. But if the cause of cardiac failure be undiscoverable or irremovable, do not hesitate to treat the effects. The search for and treatment of the cause should not be carried too far. In these cases, and in urgent cases from whatever cause, the immediate relief of the symptoms is the great end to be attained. Even in less urgent cases our treatment must be partly symptomatic, since we cannot remove the cause all at once. Under these circumstances we reduce the load which the enfeebled ventricle has to carry, by cupping or bleeding, paracentesis, puncture of the legs, and purgation. We reduce the resistance ahead of the ventricle of nitrite of amyl, nitro-glycerine, alcohol, direct renal diuretics, and purgatives. We increase the force of the heart, its driving power, by ether, ammonia, strychnine, and food.

If we can act with more deliberation, use the direct cardiac tonics, as digitalis, strophanthus, and convallaria. These drugs are invaluable remedies, but must not be used when compensation is already established, and must be properly applied to the individual case.

Taking up the individual forms of heart trouble we find in mitral stenosis, it is possible to hear more than one kind of noise as the result of this lesion. Such as, two murmurs at the apex: one was a systolic murmur which was due to stenosis; the other was a loud rumbling sound heard during diastole, and, as a rule, filling up the whole of the interval between the second sound and the succeeding first sound—a diastolic murmur. A presystolic murmur is a murmur occupying the diastolic period between the second sound and the succeeding first sound, and in that sense also a diastolic murmur, but distinguished from other diastolic murmurs by often commencing at a short interval after the second sound, and by running up to—that is, getting louder as it approaches—and finishing off with the succeeding first sound. There is no room for a presystolic murmur, except as a special form of a diastolic murmur. Now, as a fact, the ear can recognize in different cases three forms of diastolic murmur: One which begins with the beginning of diastole—that is, with the second sound—and lasts a variable time, either fading away in the middle of the period or running right through, but never getting louder as it approaches the next first sound; another which begins distinctly after the second sound and similarly fades before the succeeding first sound; and a third which, beginning after the second, runs up to and intensifies with the occurrence of the first sound. Bristowe called them respectively (a) early, (b) mid-, and (c) late diastolic. The other possible names are, respectively, (a) diastolic or pure diastolic, meaning that it commences accurately with the second sound, (b) post-diastolic, and (c) presystolic. Presystolic was an inadequate answer to the question proposed. It is or this reason that under different circumstances—that is, in different stages—you may get as a result of mitral stenosis any one of three murmurs above mentioned. The mere presence of a narrowing in a given channel does not bring about sound. There must be some fluid passing through it with sufficient velocity to make audible vibrations either in the edges of the orifice or in the fluid on the far side of the orifice.

The forces driving the blood through a stenosis mitral orifice are the passive flow of blood from the pulmonary veins through the auricle and the contraction of the auricular wall itself. Both of these forces may vary very much. The presence or absence of regurgitation will alter the force of the direct blood-flow, the amount of dilatation or hypertrophy of the auricular wall will give different results in the sound which its contraction produces by driving blood through the narrow orifice. This factor is likely to be affected by the stages of the disease. In the first stage the auricle is likely to be still powerful, either with its natural powers of contraction or with a force increased by hypertrophy; in the later stage dilatation will have proceeded to an extreme, and the auricular force of contraction will be correspondingly diminished. The presysnatural contraction of the auricle which takes place during the latter portion of diastole and immediately precedes the ventricular contraction. Do not be surprised to hear a well-marked presystolic murmur in the early days of mitral constriction; on the other hand, in the later stages, when the auricular force declines, the presystolic murmur might be expected to lose its importance.

We recognize three stages in the course of a case of mitral stenosis: a first stage when there is a typical rumbling presystolic murmur, when the heart is acting well, fully compensated or nearly fully compensated, the patient having a quiet, steady pulse and suffering few symptoms, perhaps only a little shortness of breath on exertion. These are cases of which you will see more instances among the out-patients than in the wards. They have mitral stenosis, but they are yet in an early stage and not bad enough to want to come in. In a later stage the presystolic murmur in its typical form is no longer heard, or heard only from time to time, and in its place is audible that murmur which begins after the second sound, but passes away, often leaving a long pause before the next first sound. It is the mid-diastolic murmur, with three features of interest; the pause just mentioned is liable to be obliterated if the heart beats very quickly; often it is irregular; three, four, or five beats follow quickly one upon the other, then comes a beat, or two beats more slowly. In the slow beats there is a pause, and the murmur does not touch the succeeding first sound; in the quick beats, though the murmur reaches the first sound, there is no intensification or greater loudness, and the resemblance to a presystolic murmur is only partial. The murmur commences in what appears to be the second half of a reduplicated second sound. There is practically a systolic murmur as well. At this stage the heart-sounds are liable to vary; under certain circumstances, often such as are equivalent to increased vigor of the action of the heart, the presystolic murmur of typical character will return and replace the mid-diastolic, and again it will disappear and the mid-diastolic assert itself. These changes may be very rapid; one of the murmurs may persist only for a few minutes, a few hours, or for some days. This is not unintelligible on the assumption that the driving force is responsible, seeing that even in health there are great variations of the actual force of contraction of the heart. Patients in this stage form a large proportion of the cases of mitral stenosis we see in the wards. A third and generally very late stage, though one from which temporary recovery is possible, with the result that the patient through it all again on a subsequent occasion, is one in which the heart is beating very quickly, very irregularly, tumultuously, and giving the impression that it is tumbling about almost anyhow. A somewhat humming or half-musical rumbling seems to occupy the whole period of revolution, but at intervals—that is, with each beat of the heart—a high pitched systolic murmur is heard. Now, there can be no doubt that the rumbling noise is prolonged diastolic murmur, but it is extremely difficult to discriminate its exact relation to the impulse or to the sounds, and the systolic murmur, which can be identified as such, seems to overlap it.

At this stage the patient is generally very bad, with dropsy, dyspnea, edema of the lungs, albuminuria, and all the advanced results of stenosis of the mitral orifice and its complication, tricuspid regurgitation. If improvement takes place the heart becomes slower, and often the murmur then assumes the character of the mid-diastolic and less often of a typical presystolic murmur. These, however, do not exhaust the possibilities of the behavior of the heart with regard to murmurs in mitral stenosis. In a few cases there is an early diastolic—that is, a murmur beginning with the second sound and ending in the middle or nearer the end of the diastolic period. Such a murmur is preceded or accompanied by a systolic murmur, and is usually of shorter duration than this systolic murmur. The two together closely resemble the double murmur so commonly heard at the base of the heart over the aorta, and constitute, indeed, a real to-and-fro combination. It has been suggested that the mechanism is as follows: blood is regurgitated through a stenosed orifice into the left auricle, which becomes so distended that on ventricular relaxation the excess under high tension is returned with sufficient vigor

in the first part of the diastole to produce a murmur. In the latter part of the diastole we must suppose that neither the passive flow of blood from the lungs nor even the contraction of the weakened auricle is adequate to produce audible vibrations. Then, lastly, there may be no murmur at all, either diastolic or presystolic. This occurrence is distressingly frequent. In a certain number of cases of mitral stenosis in the very last stages, when, for instance, patients are brought moribund into the hospital, the diastolic murmur may be absent; it is probably the result of the absence of force either in the passive blood-flow or in the auricular contraction to produce the necessary vibrations. Remember that a presystolic murmur is nearly always best heard, and it may be alone heard, at the very point on the surface of the chest at which the impulse takes place; wander half an inch from that point you may fail to hear a presystolic murmur. In the present case the murmur of mitral constriction was heard nearly two inches to the left of the nipple. This is probably explained by the high degree of hypertrophy of the right ventricle, which compelled the left ventricle to keep quite in the background, and hence the vibrations produced in its cavity could not reach the surface farther back than usual. Some abnormal sensation was felt over the precordial area shortly after admission, but it was only a few days before death that a definite thrill was felt, and this thrill was systolic in time and occupied a position midway between the sternum and the nipple.

Now, has a thrill any significance? Is it of any value in diagnosis? A common answer to this question is, that "a thrill means mitral stenosis." This is a very unsatisfactory answer, for it is correct only up to the point, that in the majority of cases where a thrill is felt there undoubtedly is mitral stenosis, but even when it is present under these circumstances, it is often not the direct but only the indirect result of the mitral disease. Remember that a thrill is caused by certain vibrations being palpable as well as audible. The majority of cardiac murmurs that we hear are audible only, and their vibrations are of such a kind—that is, of such high pitch or of such little amplitude—that they are not appreciable by the coarser nerves of touch, but only by the more highly specialized nerves of hearing. But, nevertheless, it is conceivable that at every one of the cardiac orifices, both with systole and diastole, there should sometimes occur vibrations which are palpable and productive of thrill, as well as audible and productive of murmur. There are, moreover, three other conditions which lead to palpable vibrations or thrills either over or near to the precordial area. One is an aneurism at the root of the aorta; another is a communication between the aorta and the pulmonary artery, generally, however, the result of an aortic aneurism; the third is a communication between the two ventricles by a perforation through the septum ventriculorum. So that you see the bare statement, that a thrill exists tells you no more really than the mere announcement that there is a murmur. If you are told of a thrill in the same way as if you are told of a murmur, you must know in what part of the precordial area it is found, and by careful observation it can be localized just as accurately as can a murmur, and you must know what part of the heart's revolution, systolic or diastolic, it occupies; the common thrill is undoubtedly a presystolic mitral; a very large proportion of presystolic typical murmurs are accompanied by thrill; mitral regurgitation is rarely so accompanied. Regurgitation through a tightly-stenosed orifice may produce a systolic thrill, and if this is frequent, it is a case in which thrill is indirectly due to stenosis. Thirdly, tri-cuspid murmur is rather frequently accompanied by thrill, and tri-cuspid dilatation or regurgitation are in a very large number of cases the result of mitral stenosis. This last is the case we have before us: a patient suffering from considerable mitral stenosis; tri-cuspid regurgitation shown by the systolic murmur audible up to the sternum and by pulsation of the liver, and a well-marked systolic thrill coming out over this area between the impulse and the sternum during the last few days of life. Pulsation of the liver is the next feature. Physiologically and clinically this is a very interesting phenomenon. It only wants to be felt for to be found; not by any means always, but in a large proportion of cases of mitral stenosis in the later periods. If the liver is enlarged, as it so often is, to a great size, and if there already exists a tricuspid murmur, place the hand firmly on the organ and ask the patient to hold his breath for a short time. In these cases, feel a pulsation often irregular in force and time, as that of the heart is, but often much more extensive in its excursions than the impulse of the heart on the side of the chest.

In the most pronounced cases, by placing one hand in front and the other behind under the right twelfth rib, not only can pulsation be felt by both, but a pulsatile expansion of the organ can be felt, showing that it is really due to a force arising from within it, and is not a mere shock or elevation resulting either from the heart, the aorta, or the vena cava. The mechanism is apparently simple; in consequence of the yielding of the tri-cuspid valve, blood is driven during ventricular contraction from the right ventricle into the right auricle; the large opening of the inferior vena cava into the right auricle is close to the tri-cuspid orifice; the opening of the hepatic vein trunk into the inferior vena cava is close to the opening of this vessel into the right auricle. The flow of blood into the liver by this means is also aided by gravity. That the force of the right ventricular contraction should be felt in the hepatic vein and its branches under these circumstances is, therefore, not surprising. With a little trouble a tracing can be taken from the surface of the abdomen over the liver either with a cardiograph or even an ordinary sphygmgraph, and such a tracing will show a close resemblance to the tracings taken from the pulsating jugular vein.

DISEASE AS MODIFIED BY CHILDHOOD.

BY WM. WORMLEY, M.D.

FEBRILE albuminuria is much more frequent in adults than in children, the ratio being, in my experience, 35.2 per cent. and 19.6 per cent., respectively. In many cases of acute infectious diseases in children the urine contains unusually large numbers of micro-organisms of different kinds, as long as fever persists, so that I am disposed to consider the kidneys in these diseases as the organs or the elimination of micro-organisms, though not always of those which produce the disease in the individual cases. Letzericli has described a form of nephritis caused by a certain microbe which he describes. V. Jaksch believes that more than one form of micro-organism is found in the kidneys in children with acute nephritis. There are different varieties of cocci associated with sepsis besides the coccus of erysipelas, which may produce in children severe renal affections with the symptoms of acute inflammation. In discussing the varieties of nephritis which occur in children, he says that the primary form is by no means so rare as is generally supposed, and that the chronic form is also not unusual.

In explaining his views on uremia, V. Jaksch claims that the symptoms of uremic intoxication are produced in part by retention of acids in the blood, but largely by the retention of an alkaloidal substance which normally is present in the urine. Ammonemia is in like manner due to the presence in the blood of an alkaloidal substance. In this case, however, it is produced in the bladder, where, under the influence of micro-organisms, the urine decomposes and sets up a cystitis, thus allowing the poison to be absorbed. Numerous experiments have taught that even large doses of most of the antipyretics are not irritating to the kidneys, but that they also have no influence on the nephritis.

The only exception is salicylic acid, which, given from the beginning of scarlatina, not only seems to diminish the intensity of the attack, but to banish the danger of scarlatinal nephritis. In general, however, oppose all vigorous treatment, and recommend a strict milk diet as the most rational means of cure.

In discussing the clinical side of the subject, we must remember the great frequency of renal inflammation after scarlet fever, for example, in 81 autopsies on cases of scarlatina at the Basle Hospital, nephritis was found 55 times. The first appearance of the inflammation may occur at different periods of the disease. There seems to be a family predisposition to scarlatinal nephritis. Hypertrophy and dilatation of the left ventricle are very common. The affection lasts two or three weeks or longer, and usually ends in recovery. Albuminuria is rather common in diphtheria, the author has observed nephritis 52 times in 150 autopsies; the albuminuria usually occurs in the first week of the disease, and is nearly always due to renal inflammation, though in very severe cases cardiac weakness or laryngeal stenosis may bring it about. Nephritis is rare in measles, varicella and rubella, and the same is true of it in catarrhal angina, parotitis, and aphthous stomatitis. In typhoid the kidneys are involved only 8 times in 300 cases, while in 24 autopsies there was nephritis in 3 instances only.

In studying the statistics showing the high rate of mortality from scarlet fever, we find prominent among these is albuminuria. A careful distinction is to be drawn between the albuminuria frequently occurring early in the disease, accompanying high fever, and lasting but a few days, and that developing at the third or fourth week, which is often very persistent and may be attended by all the evidences of a severe nephritis, though the amount of albumin be small in amount. Regarding the prophylaxis against scarlatina, the two questions arise—whether this is possible, and whether it is necessary. Though this disease is so much more dangerous than measles, the disposition to get it is very much less. Only in a few of the early years of childhood is there a really considerable tendency to catch it from others, and this rapidly grows less with advancing age.

An important point, therefore, is that the longer the child can be protected from the disease, the greater is the likelihood that it will escape it entirely. As is well known, the contagium of scarlatina is always derived from some other case, it possesses a very great vitality, it is active from the earliest beginning of the disease until far into convalescence; and it usually requires a very short period for its incubation. The breath may carry the contagion before the appearance of any eruption, though the chief danger is during the stage of desquamation. It is, therefore, absolutely necessary to isolate patients as soon as possible. The clothes can be disinfected, but it is virtually impossible to disinfect the epithelial covering. A fixed time during which the patient must be isolated cannot, therefore, be named, but the child must remain away from others until the shedding of the epithelial, especially that of the palms and soles, is entirely completed. The author has known this to require sixty-three days from the onset of the disease, and a still larger number has been reported by others.

Desquamation can, perhaps, be hastened by bathing with warm soap-water, and the dissemination of scales hindered by inunctions. It is very important that the scalp be treated in this way, as the scales of this part are fine and are shed early. A convalescent room is of especial value for those patients who feel well, but who cannot, with saftey, mingle with others. Children who have come in contact with cases of scarlatina should remain under observation ten or twelve days before again joining other children. Those in attendance upon the patients should wear some outside garment in the sick-room, and change their clothes and wash their hands in carbolic water on leaving it. The sick-room should be thoroughly aired every day, with proper precautions that the patient take no cold. All the linen used about the patient is, while still in the sick-room, to be put in a 3-per-cent. carbolic acid solution, and then boiled with a strong soap. Shoes are to be disinfected with the carbolic water, and clothes treated with steam. The walls of the sick-room, if painted or papered, are to be rubbed down with bread after the patient has been removed, the iron and wooden furniture and the floors washed with a carbolic solution, and the curtains, mattresses, etc., subjected to steam. Special vehicles should be employed to bring children with scarlatina to hospitals. Finally, precaution should be observed against the carrying of the disease by third persons, domestic animals, books, letters, milk, etc.

Jamieson has advocated the use of resorcin on account of its well-known action of causing the outer layers of the epidermis to separate without injury to the deeper ones. A 3-per-cent. resorcin-salicylate-superfatted soap was employed, and when used, with warm water, from the commencement to the close of desquamation a notable diminution in the period of "peeling" was observed. From the consideration of a large number of unselected cases the conclusion has been arrived at that, while the commencement of desquamation may be as early as the fourth day of the disease, or may, in exceptional instances, be delayed as late as even the sixteenth, the average day on which it is first visible in the ninth.

Again, from the onset of the disease till the completion of desquamation in 62 unselected cases the average was 55.5 days, no treatment having been employed to interfere with the natural process. But when washing with the resorcin-salicylate soap was begun as soon as signs of desquamation could be noticed, or shortly before, the desquamation was entirely completed in 40.26 days. There is thus a gain, on the average, of more than a fortnight. In two cases washing with the soap was practised on only one side of the body, a commencement being made in one three, in other four days prior to the appearance of any trace of scaling. In the case in which the right side was washed, peeling began on the right palm, and then subsequently on the right side of the trunk and limbs; in that in which the left side was so treated, the left palm, then the left side of the trunk and limbs, showed the earliest indications of desquamation. In all cases it was found advantageous, after washing with the soap and drying the body, to smear on

a small quantity of some bland oil, such as olive, almond, or purified whale oil. The nurses, too, found it necessary to protect their hands with India-rubber gloves, or their palms became tender from a thinning of the epidermis. Such of the patients, also, who were old enough, or far enough advanced in convalescence to wash themselves, have noticed that the hand used in washing desquamated earlier than the other.

Van Puteren has reported the following experiments on the physiology of stomach-digestion in infants. The contents from the stomachs of 248 breast-nourished infants obtained by irrigation, were utilized in the author's investigations. Their ages vary from two to forty days. In all, 1027 examinations were made. A simple Jaques catheter introduced into the stomach, and lightly pressed against its wall, was used in the experiments for determining the quantity and quality of the acid- and lab-ferments of the stomach. Washings of the stomach with distilled water at 35° C. were used in determining peptonization, and the duration of digestion, and in the latter procedure a glass cock, with double bore and containing three glass tubes, was employed. The contents of the stomach were withdrawn at intervals of 10 or 15 minutes during the period of digestion. The author considered the following points:

Studying the duration of ingested milk in stomach, it was found that 60 to 80 grams were taken by each child during the first month of life at each meal. The contents of the stomach could be easily withdrawn during an hour and a half following their ingestion. Irrigating with distilled water, they could be obtained for two hours and twenty minutes, providing that not less than 20 to 40 grams were taken at a meal. This material thus obtained was not alkaline, and contained no bile, hence was from the stomach.

In discussing the mechanism of respiration in the newborn, Von Dohrn gives the following conclusions: 1. The breathing of new born infants is mainly thorax. 2. In forced respiration, the raising of the thorax begins at the upper part and extends downward. 3. The exchange of air in the newborn, in ordinary respiration, averages 35 cubic centimeters, and increases with forced respiration to a maximum of 120 cubic centimeters. In the newborn the exchange of air is about a quarter of the entire volume respired, while in adults it is only about one-tenth. 4. On the first day of life the change of air is very small in volume; it increases until the third day, and then sinks a little, subsequently rising again. At the end of the first week its volume is about one-quarter greater than on the first few days. 5. The lungs are not filled with the first few inspirations, as a rule, the alveoli not being well distended until about the second day. 6. The respiration-curves in the newborn show no pauses.

Nikitin, writing on the value of the presence of air in the stomach and intestines of a newly born infant, tested by the ability of these organs to float in water, as a proof of the child having been born alive, places this test next in importance to the hydrostatic lung test. His experience is derived from the post-mortem examination of 100 newborn children in the university and of 24 children in the Foundling Hospital of Moscow. His conclusions are:

(1) The gastro-intestinal test not only supports the lung test, but it is even able in some cases, in which the lung test is negative, to afford evidence by itself of live-birth. (2) If in the fresh corpse of a newborn child, the stomach, and especially if also the intestines contain air, and float in water, it may with certainty be concluded that the child survived birth; provided air was not artificially introduced into the stomach, as by inflation. (3) If the body is well advanced in putrefaction, the gastro-intestinal test is less reliable than the lung test; but if the body is only moderately putrefied, the former test is as trustworthy as the latter. (4) A negative result from the gastro-intestinal test is not proof of the child having been stillborn, no more than is a negative result from the lung test; but if such a result is obtained from the application of both tests in fresh, but especially in putrid bodies, then it may be inferred that the child was stillborn, unless in rare cases in which signs exist of sudden death of violence applied immediately after birth. (5) If the stomach and a portion of the intestines are well filled with air and the corpse is fresh, it may certainly be concluded that the child did not die immediately after birth—excepting always cases of artificial inflation. (6) The first bubbles of air reach the newborn child's stomach by swallowing. (7) The possibility of "atelectasis secundaria neonatorum"—that is, of the complete disappearance of air from the lungs of a newborn child—is highly probable.

Habitual constipation is very common in bottle-fed children, and that even those at the breast are not exempt from it. The trouble may be due to a deficiency of sugar in the breast milk, or to the presence of starch in the diet, or to any food which burdens the alimentary canal with a large undigested residue. This sets up a slight catarrh, and the fecal masses, rendered slimy by the mucus, do not offer sufficient resistance to the muscular contractions of the intestine. Another cause is dryness of the stools, this being generally due to an insufficiency of fluid taken. In either case the fluid grows accustomed to the presence of the fecal mass, and its expulsive power is soon impaired; while the pain attending the evacuation causes the child to delay it as long as possble, and the constipation is thus made more obstinate.

It must be borne in mind that the administration of opium by ignorant parents or unscrupulous nurses is sometimes at the root of the trouble. Constipation may not at all interfere with the general health, or it may produce loss of appetite, colic and violent straining efforts. When the infant is at the breast a teaspoonful of syrup, three or four times a day, will often quickly restore the regularity of the bowels. If the stools are habitually dry and hard and the urine scanty, it is an indication for the supply of more fluid, and a dessert-spoonful of some saline mineral water given at night aids the return of the stools to their natural consistence. The form of constipation due to intestinal catarrh may often be removed by lessening or removing the starchy matters from the food. Mellin's food is useful in such cases, particularly if barley water be added to the milk to prevent the formation of the dense curd in the stomach. Benger's "self-digesting food" is also useful and does not need the barley water, as the pancreatin digests the curd. When the child has reached the age of ten months, a little veal-broth or beef-tea is advantageous, or a little well-boiled asparagus or broccoli, or a teaspoonful of fine oatmeal to thicken the milk. In other cases the catarrh is due to chilling of the body from insufficient clothing, and the remedy is to swathe the belly in flannel and to leave no inch of the surface of the body uncovered. Frictions of the abdomen following the course of the colon are to be recommended. A suppository of castile soap, the injection of 40 to 60 drops of glycerin or of half a pint of soap and water will produce an evacuation, but is by no means curative. To

produce a permanent cure such remedies must be used as regulate the bowels without purging. For this purpose we may employ a mixture of tincture of nux vomica and tincture of belladonna, with the infusions of senna and calumba; or one of the fluid extract of cascara with tincture of belladonna. Half a grain of sulphur every night is a useful plan of treatment. When the motions are drier than natural, a valuable prescription for a baby of six months old is: Sulphate of soda, $^{5}/_{10}$ grn.; sulphate of quinine, ¼ grn.; tincture of nux vomica, ½ drop; aromatic sulphuic acid, 1 minim; in a teaspoonful of water three times a day before food. This draught does not teach the bowel to depend upon it, but to act spontaneously, so that the frequency of administration can be diminished and the medicine finally discontinued.

Holt analyzed 173 cases of pneumonia in children with reference to the occurrence of cerebral symptoms. All but 13 were under five years of age, 34 cases (20 per cent.) present these symptoms, namely, convulsions in 14, delirium in 12, other cerebral symptoms in 8. The convulsions of pneumonia did not differ from those of other acute diseases, and in one-half the cases they occurred with the invasion; in the others toward the close.

Delirium was rare in the first two or three days; most marked at the height of the disease (fourth to seventh day). In the mild forms it was an incoherent rambling during sleep; in the severe forms it was sometimes low, muttering; more commonly wild and excited, and accompanied by all the symptoms of cerebral-spinal meningitis. Other patients had semi-stupor alternating with great irritability, simulating tubercular meningitis very closely. The diagnosis of cases of cerebral pneumonia from meningitis is the question of the most importance. The chest should be examined thoroughly and repeatedly, since positive physical signs sometimes appear late. Cough is usually present, but its absence in the first two or three days is of little diagnostic value. Activity of the alae nasi is rarely absent in pneumonia, but may be seen in other conditions. Alteration of the pulse-respiration ratio, with acceleration of the respiration, is the most important symptom. Irregular respiration is almost never seen in pneumonia, the slow, irregular pulse of meningitis does not occur, and localized paralyses are not met with. The knee-jerk is usually lost in meningitis, while the author does not know that its absence has ever been recorded in pneumonia. The course of the case nearly clears up the diagnosis, since the cerebral symptoms of pneumonia are not so severe or continuous as those of meningitis. The diagnosis is impossible between broncho-pneumonia with cerebral symptoms and pulmonary tuberculosis with a few tubercles in the brain.

As regards the etiology of the cerebral symptoms, the great predisposing factor is the susceptibility of the nervous system present in early life. All but one of the 14 cases of convulsions occurred under two years of age. Delirium was more common between four and eight years of age. High temperature was a common cause of the cerebral symptoms, especially of delirium and stupor. The constitution of the patient appears to have had but little influence, except that convulsions were more common in delicate children. The form of the disease is a factor of importance; the frequency of the cerebral symptoms appearing to be proportionate to the abruptness of the onset. The author has studied the influence of the location of the disease with same care and is convinced that the supposed special disposition to cerebral symptoms in apex pneumonia does not exist. It is the extent rather than the location which is the factor in producing nervous symptoms.

As regards prognosis, we may conclude that with the exception of late convulsions, the evidence of cerebral affection does not much increase the danger of the disease. For treatment the author recommends the cold pack in hyperpyrexia, and antipyrin to quiet delirium, restlessness, and cough.

The result of comparisons of the measurement of hepatic dulness in children of various ages, in both health and disease shows the following results: That the exact valuation of the dimensions of the liver in children is difficult owing to the involuntary contraction of the muscles, to the thin lower border, and to the oblique projection of the upper border. That upon the anterior face of the organ the apparent extent of dulness during life is almost always one to two centimeters shorter than the true extent measured upon the cadaver before and after opening the abdomen. That the superior border of the liver corresponds, in general, to the fifth costal interspace. That in health the extent of vertical dulness of the liver increases with a fair regularity for each year.

This growth, appreciable between the second and ninth years, then ceases almost completely, to begin again at the twelfth year. Until the beginning of the eighth year the vertical dulness in health, measured in centimeters, corresponds to the age of the child, plus one, two, or three centimeters. After eight or nine years the extent of dulness corresponds approximately to the age, sometimes, however, remaining a little below this figure. In a pathological condition, enlargements of the organ may be divided into three classes: *a.* The projecting liver (catarrhal jaundice, congestion); *b.* the large liver (malaria, cardiac disease); *c.* the very large liver (amyloid disease, hydatid cysts, syphilis, fatty liver). The difference in measurement between a healthy and diseased organ in children of the same age varies from two to four centimeters under the influence of slight causes (congestion, catarrhal jaundice), and from three to ten centimeters under the influence of profound alterations.

THERAPEUTIC USES OF WATER.

BY ANDREW MCADAMS STOVALL, M.D., JASPER, ALA.

HYDROTHERAPEUTICS may be defined as the method of applying water for the relief or cure of disease.

It includes the application of water in any form as solid, fluid, or vapor; from ice to steam, internally or externally. Some seem to think that Hydrotherapeutics is only the use of cold water.

In the form of steam it has a styptic action; and the aseptic uses of hot water in surgery, with its resorbent effects in gynecology and surgery, are well known. Its application in gastric, rheumatic, and intestinal troubles and in meningitis, render hot water as important a hydriatic agent as cold water.

The origin and growth of hydrotherapy form one of the most interesting chapters in the history of medicine. They illustrate how prejudice may thwart progress and how enlightened physiology and pathology have tended to reinstate a valuable but neglected remedy.

I will first consider the general effect of water, when introduced into the system. The importance of water for the maintenance of the human organism is a well-known physiological fact. It not only furnishes a sol-

vent for the elements required in the life and functions of the tissues, but it serves to maintain that degree of tension which is required for the proper circulation of the lymph stream.

Glax has furnished the most recent investigations on the subject.

The pulse is affected according to the temperature of the water taken, cold water reducing the frequency by from six to thirty beats.

He has seen a reduction in the pulse from 80 to 49 beats from the drinking of 45 oz. of water at 43° F., this being drunk in doses of 9 oz. at intervals of 30 minutes.

Warm water increases the pulse by from 10 to 16 beats. The character of the pulse is affected by the drinking of large quantities of water.

Glax says that the changes in the pulse ensue too quickly after the drinking of water of different temperatures to be the result of an increase of water in the blood; they are therefore very probably the result of a reflex action upon the vaso-motor centers. The latter effect was actually demonstrated by the experiment of Spallitia and Tomasini, who found after the inhibition of cold water a narrowing of the cutaneous vessels.

It may, therefore, be stated with some degree of positiveness that the internal use of cold and of warm water has a definite influence upon the vaso-motors not unlike that produced by their external application.

The diuretic effect of water does not depend upon the amount imbibed, as is erroneously supposed, but rather upon an increase of blood pressure produced by the irritant action of the cold and the consequent increased rapidity of the blood streams in the kidneys. For this reason the diuretic effect is absent when the water is drunk luke-warm or when the heart is not sound. Hot water, having the same irritant action, produces the diuretic effect.

From the above mentioned physiological facts with regard to cold, warm, and hot water. when taken into the stomach, the application in disease is evident.

When cold water is taken into the stomach its primary effect will depend entirely upon the condition of the alimentary canal and the constitutional state of the person who takes it.

In the majority of healthy individuals, if not all, the stomach in the morning and before taking food is contracted so as to present the appearance of a tube, the inner walls of which are so nearly in contact that its caliber is considerably less than the small intestine, except when the latter is extremely contracted.

The tubular stomach curves obliquely downward and to the right from the cardiac to the pyloric orifice.

Under this condition the water will run directly through into the small intestine, its only effect being by the sudden chill to exert some influence on the tone of the blood vessels and the gastric mucous coat while washing through whatever mucus or particles of food that do not cling to the walls of the stomach, and through reflex action produces a diuresis independent of the amount of water drunk or absorbed. In addition it may cause an acceleration of the heart-beat, increased arterial tension and greater vigor of the inspiratory act. On the intestinal tract it may cause increased peristalsis, and, frequently, evacuation of the alvine contents. In other cases where relaxation of both the muscular walls of the blood vessels of the stomach, or of the stomach and intestines, is great, such as may result from excessive eating, indulgence in stimulants, or great prostration of the nervous system, or from overwork or long-continued anxiety, normal reaction may be impossible, or at least delayed until the water which is taken has slowly passed through into the intestines; when another dose may have the desired effect. It may happen that the water first taken may produce nausea and vomiting, the stomach being relieved of its abnormal contents.

The effect of hot water, taken in the morning, also varies according to the condition of the alimentary canal and constitution of the subject. In the healthy condition, previously described, in which the stomach is contracted to its tubular shape, the vessels are not unduly relaxed, and the nervous system is so refreshed by rest and sleep that it readily reacts to normal stimulation, the heat may prove to be the reverse of beneficial. If the water be simply warm, it will, in all probability, induce nausea, while, if hot, the overstimulation may cause an undue secondary reaction, with relaxation of arteries, oversecretion of mucus, and, perhaps, flatulence. This secondary relaxation may prevent the intestinal evacuation, which would relieve the distress.

However, when there is a pathological relaxation and atony of the muscular and nervous apparatus, with hypersecretion, distension, and, as a rule, flatulence, the hot water may have just the stimulant effect which is needed, and give as good results as cold water, or better. This is more particularly the case in debilitated conditions, such as chronic alcoholism.

Recently I had a case of chronic alcoholism, with gastric catarrh, cirrhosed liver, and abdominal ascites. The patient could not retain anything on his stomach. At last I succeeded in inducing him to drink a glass of hot water every half hour, the stomach was relieved, the bowels moved freely, the circumference of the abdomen was reduced six inches in 48 hours, fermentation of stomach was relieved and the patient could take nourishment.

The constitutional effects indirectly induced by the drinking of cold (or hot) water are of course those associated with improvement of digestion.

The constitutional effects directly induced by the drinking of cold (or hot) water are slight increase of vascular pressure, increased flow of urine and at times a laxative effect upon the bowels, increased secretion of the glands of the alimentary canal, and, as a result of the discharge of their secretions, the flushing of excretory organs, particularly of the kidneys, which carry off so much of the effete matters resulting from metabolism.

The therapeutic uses of water when given internally, either by the mouth or rectum, are partly indicated by what I have already said:

1. In functional disorders of the stomach and intestines, especially in chronic gastric, or gastro-intestinal catarrh, and in some cases of constipation in flatulent conditions, or catarrhal irritibility, causing irregularity of the cardiac rhythm or palpitation.

2. In lithemia, accompanied by acid, high colored urine, the flushing of both the alimentary and urinary tracts, with largely increased diuresis, irrespective of its increasing the amount of circulating fluid in the blood vessels, does actually, as it is popularly expressed, purify the blood.

The application of water upon diseased surfaces and in cavities is termed irrigation, because the contact of the water with the surface treated is brief and its action chiefly local.

Irrigation of the stomach is called lavage.

In infants, next to proper regulation of diet and hygiene, is irrigation of the stomach, for by this means you remove all food bacteria and fermenting material. Thus, it is valuable in all gastro-intestinal troubles of children.

Baruch uses lavage of the stomach for diagnostic purposes. He says: "When a case of chronic dyspepsia presents itself, it is my custom to bid the patient eat a full meal at 12.30 P.M. and present himself at 5.30 for exploratory irrigation of the stomach with tepid water. The stomach should be thoroughly washed out, even if several quarts of water are required, but no larger quantity than one pint should be introduced at one time. The washings should be carefully inspected, when it will be readily discovered whether the patient has masticated his food thoroughly and whether portions of food have remained undigested. Thus, a clew will be afforded the physician as to the actual digestive powers of the patient, and the latter attains a valuable guide for future conduct. If the washing contains mucus, it is important to distinguish between stomach and throat mucus. The former is a thick, tenacious, brown mass, which floats upon the surface of water like the scum on the surface of a pond; the throat mucus is thin, transparent, and quite abundant, being the result of irritation, by the tube, of the pharynx and esophagus. The quantity and quality of the stomach mucus indicate with some accuracy the condition of the gastric mucus membrane. Its rapid or slow disappearance, under repeated irrigation and other treatment, indicates the character of the disease affecting the mucous lining; and the progress of the case under such treatment is much more reliable than other treatment that can be prescribed for these usually hypochondriacal patients.

In dilatation of the stomach, not due to stricture, but simply to gastric atony, the case can be cured, or greatly relieved, by irrigation of stomach, five hours after a meal, either before breakfast or dinner.

I know a physician who was in bed for months with dilatation of stomach, and several thoroughly competent physicians had attended him. Dr. W. H. Johnson visited him and suggested washing out the stomach; the result was recovery, or at least sufficient relief for him to be up and to do some practice. It is useful in nervous dyspepsia, gastralgia and in the fearful pains of gall stones. Baruch says that in a case that occurred in his own family not only was the pain relieved but that the gall stones were found in the stools next morning.

The first case of ileus successfully treated by gastric lavage was presented by Kussmaul. The patient was admitted in March, 1882. He had been treated by the most approved methods for eight days. The stomach was thoroughly washed out, feculent masses were evacuated and the irrigation was repeated every three or four hours until the water came clear. Then, the patient fell asleep for the first time, and on awakening passed a thin yellow stool. No further treatment was necessary; recovery was complete in five weeks.

The second occurred a year later. Here again, all remedies had been exhausted for nine days without result. Laparotomy was determined upon, but Professor Lucke, the surgeon, requested Kussmaul to see the patient before operation. One large irrigation of the stomach removed immense masses of feculent matter, and was followed by sleep, which large doses of morphine had failed to secure.

The publication of these cases aroused so much attention that gastric lavage was at once added to the remedies for ileus.

In a discussion of Prof. Bordelen's paper on "Ileus" at the Berlin Medical Society, Prof. Henock said that inasmuch as an exact diagnosis of ileus is often impossible, it is the duty of the medical attendant to resort to gastric lavage. He had observed only one case, but the result was so remarkable that it made a strong impression upon him. He would, therefore, always regard it a great sin of omission not to practice lavage in the early stages of this malady.

Dr. C. D. Spivak, in the *Journal of the American Medical Association* for April 13, 1901, in his conclusions of the paper entitled "Lavage of the Stomach a Therapeutic Agent in the Treatment of Habitual Constipation," says: "In preliminary communication I wish to call the attention of the profession to the following statement. First. A certain percentage of individuals suffering from habitual constipation are apt to have a spontaneous movement of the bowels the following day after the stomach has been washed out for the first time. Second. The majority of such patients will eventually recover the normal functions of the bowels if lavage is continued daily for two or three weeks, and later, at greater intervals. Third. The best results are obtained by using cold water, or hot and cold water alternately. Fourth. The best time for such lavage is an hour before breakfast.

Enteroclysis is the use of large quantities of water in the large intestines by means of a long, rectal tube. It is curative in many cases of diarrhea and dysentery, removing the materials of decomposition and pathological elements.

By flushing the colon with large quantities of hot water, and using half a pint of hot water and retaining it by lying down, you will have a safe and powerful means of causing the kidneys to act freely. In enterocolitis, by flushing the large intestines you remove all decomposing material, cause the kidneys to act freely; if cold water is used, the temperature is lowered and the child that was restless when you commenced goes to sleep for one or two hours. To do this in children, place the child upon its back, have an assistant elevate the buttocks by lifting up the feet, let the colon fill by gravity, then let it escape per rectum.

Cold enemata or irrigations are regarded by Dr. Kemp as dangerous in renal diseases, but hot irrigations are useful in uremia and renal insufficiency.

The external application of water may be classified as follows: 1. Ablution, 2. Half bath, 3. Affusion, 4. The sheet bath, 5. The cold bath, 6. The wet pack, 7. The wet compress, 8. Full bath, 9. The douche.

As it will be impossible for me to describe all of these methods and explain them fully I will only attempt to describe the full bath or the bath as used by Brand in the treatment of typhoid fever. I will describe a bed-bath devised by Dr. A. C. Haven, one that can be constructed at a cost of from seventy-five cents to one dollar. Dr. Haven described it as follows:

Tie a loop of rope around the head-board, another around the foot-board, and connect by two parallel ropes; attach the oil cloth with clothes pins, and you have as comfortable a bath as the most expensive. The loop around the head-board and foot-board may be dispensed with in metal beds. Four feet of garden hose with a wooden plug in one end makes an excellent syphon.

Technique.—The full cold bath is administered as follows: The patient receives a stimulant. He is undressed and a light napkin is applied to cover the sexual organs; his face is now bathed with ice-water, and if too feeble to step into the bath, the water at 56°, he is lifted in by two assistants, with the greatest gentleness. As he is lowered into the water, he gasps and shudders a moment and perhaps cries out. But, gentle reassurance by word or deed, quiet demeanor, devoid of haste, and the absence of all actual force or argument to resist his natural desire to escape from the seemingly heroic treatment rarely fails to quiet his apprehensions. Friends or

relatives must be advised to leave the room, as their presence would increase the anxiety of the patient and render him more resisting to injudicious and unavailing explanations. If an air cushion has been suspended at the head of the tub, it will afford a resting place for the patient's head; a large water cushion makes a comfortable rest for the nates. In the absence of a support for the head the nurse will hold it up with the left hand while with the right gentle friction or chafing will be practised over successive parts of the body. This may be done by an assistant, some member of the family, or a friend. Care should be taken that every part of the body (except the lower part of the abdomen) receives the benefit of these frictions, which are regarded as of supreme importance by the originator of this method, in preventing chilling, collapse, cyanosis, and heart-failure. The effect of this continuous gentle chafing is a suffused redness, which is in marked contrast to the previous pallor of the surface, and demonstrates that the caliber of the superficial vessels is being considerably enlarged. As friction is executed upon successive parts of the body, we really manage to maintain a constant contraction and dilatation of the peripheral vessels, the former being accomplished by the contact with the cold water in motion, the latter by the friction and its attendant reaction. Complaints of chilliness must not be regarded as an indication for removal of the patient from the bath, unless it be accompanied by decided chattering of the teeth; the former is voluntary and may be emotional, the latter is usually involuntary. A small pulse, a cyanotic or shrivelled condition of the hands, are regarded by the inexperienced as a warning to remove the patient from the bath before he has received its full effect. These symptoms may be due, it should be remembered, to the local action of the cold upon the superficial vessels, and need not be regarded as threatening, unless the face becomes cyanotic. Often the finger nails become cyanotic when the patient grasps the edges of the tub in his efforts to hold himself while shivering. Pressure against the edge of the tub prevents return of the venous blood. All of these signs may be fallacious. Cyanosis of the face, however, is a manifestation which demands cessation of the bath. Not being submerged, the face can be rendered cyanotic only by actual infeeblement of the heart's action, a condition which is exceedingly rare when the bath is administered with friction. That a small pulse is not an indication of heart failure will be evident to the reflecting observer from the fact that it becomes less rapid and compressible, having lost its dicrotic character.

Before the termination of the tub bath, the patient's bed should be made ready in the following manner: A pillow covered by a towel being placed under its upper portion, upon the blanket is spread an old linen sheet. Several hot water bags or bottles are prepared for the feet, which are usually cold after the bath. A bath being finished the patient is gently lifted out, the napkin covering the sexual organs is rapidly dropped, and he is placed upon the previously prepared linen sheets, so that the upper edge extends above his shoulders to the nucha. Being laid upon the sheet so that his nucha touches the upper edge, the sheet is brought around the body. A fold being pressed in between the arms and the body, and between the lower extremities, with the view of preventing approximation of two body surfaces, the blanket is now wrapped around the patient. If the temperature has been high, above 103° in the rectum, the patient is allowed to lie in a sheet from five to ten minutes; if the temperature is lower, he should be dried at once with the sheets and afterward wrapped in a soft blanket.

In either case, hot water bottles may be placed to the feet. Usually the patient, who has been restless previous to the bath, will fall asleep. In some cases shivering may continue until reaction ensues.

Prolonged shivering after a cold bath points to some defect, either in duration or temperature. The former must be diminished or the latter increased, or both. During and after the next bath, more attention should be paid to friction and to the administration of stimulants in order to further reaction by vis a tergo. The application of heat to the extremities is objectionable, because it produces artificial heat internally, and its necessity indicates some serious defect in the mode of application of the bath if it recurs after several baths. This is the ideal bath of Ernest Brand, of Stettin, for the treatment of typhoid fever.

In a discussion of tub bathing in typhoid fever by the New York Academy of Medicine, Dr. A. B. Ball said, "The reason that the doctors at Bellevue, including himself, had given up the bath treatment some years ago, was that they did not employ rubbing; everybody who had tried the most recent method, adding friction, had been convinced that there was no other method so valuable." Hare says, "The vaso-motor system is made up on the one hand of the vaso-motor apparatus, and on the other of the blood vessels themselves. The resistance offered to the heart by the properly acting vaso-motor system through its influence on the vessels, is identical with the friction offered to the driving wheels of a locomotive. The locomotive is intended to meet and stand any resistance, and if the resistance be removed by slippery rails the wheels fly around ineffectually, racking the machinery and destroying its usefulness."

From the above some important diagnostic and therapeutic facts may be learned: First, that a rapid pulse may be due in no way to a disordered heart, but to vaso-motor relaxation; second, that the proper way to treat this rapid pulse is to put sand on the track and increase the resistance and not make more steam or give digitalis which will only cause the engine, or heart, to work away on slippery rails with more wear and tear, and make no progress.

The cold increases this resistance.

While I have imperfectly presented this subject, I hope that such attention has been called to it as to elicit discussion.

I have freely made use of "Hydrotherapy," by Simon Baruch. Foster's "Practical Therapeutics." Hare's "System of Therapeutics."

FOOT-AND-MOUTH DISEASE.*

The epizootic aphtha, or foot-and-mouth disease of cattle, sheep, swine, and poultry—also known under the more general designation of murrain—has reappeared in New England, after an absence of more than thirty years, and the national government has issued its quarantine order against it. The disease has been, for at least two centuries, widely disseminated on the European continent, where it breaks out at intervals, causing severe losses to agricultural interests. Horses and man are rarely affected, but the physician should be prepared to recognize the trouble by its salient features. It is characterized by fever and the presence of vesicles in the mouth, on the feet, and, more rarely, on the udder in cows. The virus has not been recognized morphologically by bacteriologists, nor has it thus far been culti-

*Condensed from an editorial in the *Boston Medical and Surgical Journal.*

vated artificially. The effort to obtain a protective serum has been only partially successful. The virus is destroyed in milk and meat by thorough cooking, and it is easily rendered harmless by drying and disinfection. In the surroundings of recovered animals it does not usually survive more than two weeks.

In cows the disease manifests itself as a fever after three to five days' incubation. On the gums, the tongue and the lips appear small vesicles, which enlarge and may coalesce. Salivation is increased, and frothy masses drop from the mouth, while a peculiar smacking noise is heard. The vesicles soon burst, leaving erosions or small ulcers which heal promptly. The eruption in the mouth is accompanied by a similar one on the corona of the toes and in the base of the cleft. Vesicles also may appear on the teats. The disease usually subsides in one to two weeks, and leaves the cow with greatly lessened milk secretion and much less in weight.

Human beings are most frequently infected by drinking raw milk. Butter and cheese have been known to induce the disease. Children are most susceptible. A light fever, with a sense of dryness and heat in the mouth, precedes the eruption of vesicles which appear most commonly on the lips and tongue, more rarely on the hard palate and in the throat. The eruption is accompanied by salivation and by considerable swelling of the lips and tongue, making mastication and deglutition painful. The vesicles, after attaining the size of peas, burst and leave rapidly healing erosions. The disease in man, on the whole, is not one to cause alarm. The danger of secondary infection (as through wounds on the hands of milkers) should be considered and anticipated by proper antiseptic treatment. The sanitary precautions called for comprise a prohibition of the sale of milk until the disease has entirely disappeared from the herd, as well as of the flesh of animals slaughtered while sick. The movement of animals in infected localities must come to an end until the danger of disseminating the virus is past, for, like smallpox, this disease seems to spread in a most insidious manner and appear unexpectedly in distant places.

The malady in man needs more study, and there is no better opportunity than under present conditions. Moreover, interfering as it does with the production of our most valuable foods, it is nothing less than a public calamity. Hence, whatever can be done individually by the physician in exposing its hidden foci will be of great value in the eventual eradication of this plague.

TRAINING CHILDREN BORN BLIND TO SEE.

From Vienna comes a letter telling of a discovery made by Director Keller, by which children born blind are trained to see. He exhibited a child seven years old who had perfect'y formed eyes, but who was born blind, brain blind.

He taught this boy in the short time of four months to tell colors, form and to read with his eyes.

The director was led to believe that he could accomplish this after he had taught seventy deaf and dumb children with normal ears to speak and hear.

His method consists in first teaching a child to distinguish light from darkness by moving a disc of light before the eyes in a perfectly dark room. Thus he developes a faculty not recognized by the child before, and this part of the training is slow, often requiring months of patient labor.

The next step consists in placing objects with which the child is familiar, against a light disc, and the child is told what they are. By means of colored glass placed before a light, colors are taught.

Figures of different design are then placed in a dark room with the light falling upon them, and gradually the sight is accustomed to daylight.

WHEN IS A SPECIALIST A SPECIALIST?

In the malpractice suit of Baker vs. Hancock, the Appellate Court of Indiana has defined what is understood as a specialist. The court holds that the skill required by a specialist is greater than that which must be possessed by a general practitioner. It says that a physician is such whenever he acquires sufficient learning to be trusted with a license to practice medicine and it is legally practised. As to when a physician becomes a specialist, the court holds that it is a question of fact. The party may, or may not, have qualified himself as a specialist. Whether he had done so was a matter within his own knowledge, and primarily for his own determination. Having arrived at the conclusion that he possessed such qualifications, it still remained with him whether he would hold himself out and receive and treat patients on the basis of it. When he determines to do this, and does it, it then becomes his duty to exercise that degree of skill which he represents himself as possessing. To relieve one practicing medicine under such circumstances of responsibility commensurate with the pretension by which patients are secured and compensation fixed, would be to give ignorant practitioners license to defraud and to place innocent patients at their mercy.

THE BENEFICENCE OF DISEASE.

The London *Hospital*, commenting on some remarks by Sir Frederick Treves, in a recent address at University College, Liverpool, concerning our present manner of regarding disease as distinguished from that of our forefathers, contrasts these opposing views as follows:

The old physicians regarded every symptom of disease as being of necessity wholly noxious and as needing to be stamped out. If the patient vomited, the vomiting must be stopped; if he coughed, the cough must be made to cease; if he failed to take food, he must be made to eat. To the modern physician, however, things appeal in a very different manner. To him there is nothing preternatural about disease. Not only is it the outcome of natural processes, but these processes are themselves, in many cases, marked by a purpose, and that purpose a beneficent one. The time has come when it would rather appear that many of the so-called symptoms of disease are but expressions of a natural effort toward cure; that they are not malign in intent, but have for their end the ridding of the body of the very trouble which they are supposed to represent. Take, for example, tuberculosis. Modern pathology teaches that the so-called symptoms of this disease do but represent a valiant attempt on the part of the body to repair an accident, such accident being the entrance of a parasite into the tissues. Take, again, an inflammation following a septic wound of a finger. The disease, so called, is distressing enough, but the manifestations are no mere outcome of a malign purpose. They are well intended, and have for their object the protection of the body from further parasitic invasions and the elimination of such septic matter as may have been already introduced; and so on. Even the much-dreaded peritonitis which to surgeons of the past appeared as the very hand of fate—an impending horror spreading only disaster and death—is now recognized as the operating surgeon's best friend. Times have changed; our views have altered; and we must no longer "fight" disease in the old manner, nor "attack" it with the old weapons.

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Our grand business in life is not to see what lies dimly at a distance, but to do what lies chiefly at hand.—CARLYLE.

"PEACE AND GOOD WILL."

AT this season of good fellowship we should be glad to be able to report a prospect of increased harmony in the medical profession in this State, by means of the union of the State Medical Association with the State Society, as has already been intimated in these columns might be the case. It does not look at this writing as if it would be possible to accomplish much in this direction until after the meeting of the American Medical Association next June. The State Society is asked to agree to a constitution not yet in existence, and if we may judge by the utterances of leading men in the Association, will not differ materially in respect to its code of ethics from the one to which the Society dissented, and which was the cause of all the trouble. Is it reasonable to expect the Society to unite upon such a basis? The leading members of the Society are naturally opposed to retrograding, as they consider the step that would look to an acknowledgment of any code—excepting the unwritten one which should govern the conduct of all gentlemen—to be. This is the question which will be decided at the next meeting of the State Society, and the decision does not seem uncertain. The Society has been without a written code for many years, and it was because of this, that a few members seceded and formed the Association, practically for the purpose of upholding the old code, to which the Society is now asked to return. It must be remembered that the State Medical Society is a part of the organic law of the Commonwealth, and through it the regulation of the practice of medicine is accomplished. The Association since its organization has been very aggressive and has attempted to supersede the Society in its work, thereby engendering bad feeling on the part of many. Now it is proposed to combine these two organizations under a new charter, really at the dictation of the American Medical Association which is a self-constituted body. Many think it would be undignified for the State Society on account of its position and standing, to take any action whatever, but leave the whole matter to the American Medical Association to do as it sees fit when it gets ready.

Probably some day the American Medical Association will agree with the State Society on the code question, and when it does, there will be time enough for affiliation.

It seems strange in these days of progress and broad views, that any body of scientists should demand a code which practically makes it sectarian. It ought to be sufficient to frame bylaws which should state the general conduct to be expected of its members, but statements as to forms of belief or unbelief should be relegated to the theologians for discussion and sectarian wrangling.

Nothing so excites the spirit of antagonism, often resulting in personal bitterness, as attempts to abridge freedom of opinion and action, and the fullest latitude should be guaranteed to the limit of interference with the personal liberty of some one else. The same statement holds good in respect to sectarian designation and to dogmatic assumption. It is the non-essentials which cause the most trouble in the world, and this is increased by exaggeration. There can be no doubt that all medical men could agree to unite upon the essentials in medicine regardles of sect, if they could only get together and understand each other better.

It is the code of ethics of the American Medical Association which has done more than any other one thing to perpetuate sectarianism in medicine, and as it is responsible for the lack of harmony in the profession of this State for the past two decades, its abolition should be insisted upon.

In the interest of peace and good will, we earnestly hope that these exciting causes of personal antagonisms may cease, to the end that a union which shall be durable and permanent may dominate the medical profession.

The TIMES extends its hearty best wishes and Happy New Year to all its readers.

BE SURE YOU ARE RIGHT, THEN GO AHEAD.

IF more attention were paid to this proverb, attributed to David Crockett, but worthy of Solomon, a great many mistakes would be prevented, not only in legislation, but in private life. This is forcibly illustrated by the temperance excitement of a few years ago, which was brought to bear with such force upon Congress as to lead to the abolition of the canteen in the army. In the place of being controlled by the officers of the army, looking to the comfort and welfare of the soldiers, it passed into the hands of irresponsible parties, who established saloons near army posts, in which liquor of the worst kind was sold at a large profit, and the soldiers were tempted not only to the free use of intoxicating liquors, but also to the worst vices of licentiousness.

The harmful effects of the anti-canteen law, especially in the Philippines, has been so clearly demonstrated by reports of army officers, showing a great increase of drunkenness and an increase of syphilitic disease, that the Secretary of War, in his annual report, strongly

recommends the abolition of the present law and restoring the canteen to the army. The soldiers will have occasionally alcoholic stimulants, and wise legislation should so guard them as to prevent as little harm to the soldier as possible. Temperance agitators in their earnest and honest attempt to remedy a great evil, might take advantage of the plan adopted by Norway to solve the drink problem, which has converted what was once the most drunken nation of Europe, into the most sober. This is done by taking the trade out of private hands. So long as the private interests of the seller runs counter to the interests of the State, so long will the effort of the State to restrict and control the traffic be baffled. The trade, when taken out of private hands, is worked, locally, not by the State, and is subject to no other State control than that which is necessary to secure honest administration and the complete carrying out of the conditions determined by the statutory law under which localities carry on the traffic.

Another illustration of the problem at the head of our article is seen in the strong efforts which have, within the past few years, been made by philanthropists and others, who have been shocked by accounts of sufferings in animals in vivisection to pass a law prohibiting it in most cases. One of the strongest arguments against this one-sided view of the question and this false philanthropy is brought out by Dr. W. W. Keen, Professor of Surgery in Jefferson Medical College, to Senator Jacob H. Gallinger, of New Hampshire, who had been a prominent leader in the effort to establish a law against vivisection. The case was that of Hugh K. Aiken, a midshipman at the United States Naval Academy, who was severely injured in the head in a football game, and whose life was saved by a correct diagnosis and prompt action of the surgeon. There was no fracture of the skull, and the only physical evidence of any injury was a slight abrasion of the left temple. "Had I seen the case," said Dr. Keen, "before 1885, I would have been unable to explain why spasms were chiefly manifested in the right arm, and from the evidence of the slow pulse, the headache, the stupor, the bruise in the left temple, etc., I would have been justified in inferring that probably the front part of his brain was injured at the site of the bruise. Had I opened his skull at that point I would have found a perfectly normal brain and have missed the clot. The young man, therefore, would have died, whether his skull had been opened or not.

"In 1902 observe the difference. As a result of knowledge derived from experiments upon animals, which have located precisely the center for motion of the right arm on the left side of the brain, near the top, and a little in front of a vertical line drawn through the ear, and, disregarding entirely the site of the headache and of the bruise, I reached the conclusion that there had been a rupture of a blood vessel within the head, which had poured out a quantity of blood, and that the situation of the clot should correspond to the 'arm center.' The location of this 'arm center' was far away—about three inches—from the location of the bruise, and its position was fixed absolutely as a result of experiments upon animals, confirmed later by many operations on human beings and also by post-mortems.

"As soon as the skull was opened at this point the clot was found, its thickest point being exactly over the arm center, and nine tablespoonfuls of blood were removed, with the result that the patient's life has been saved. The blood had first been poured out over the 'leg center,' which is located a little higher up than that for the arm. This explained the early spasms in the right leg.

"The clot did not extend, however, further down than the arm center. This explained why the face was never convulsed, for the 'face center' lies just below that for the arm."

This is only one of hundreds of cases in which life has been saved by a similar exact localization. If, in the face of these facts, is it sound philanthropy for the anti-vivisectionists to continue their contest against the practice which throws so much light upon otherwise obscure matters? Looking at the question from all sides, who are the most humane, those who stand with folded arms and see innumerable lives needlessly sacrificed, or those who by properly instituted experiments, apply new truths to the service of humanity? The great majority of experiments on animals are utterly painless. The cases of cruelty quoted are merely statements without proof. If they occurred existing laws are quite capable of dealing with them .

THE IMPORTANCE OF MICROSCOPIC EXAMINATION OF THE BLOOD IN OBSCURE DIAGNOSIS.

THE Surgeon-General of the United States for the year ending June 30, 1902, states that during that time 35,180 cases of malarial disease were reported from the army. A microscopic examination of the blood in the general hospital, Presidio, in San Francisco, California, has shown the malarial parasite in a large number of soldiers from the Philippines, where the malarial condition was so masked, as only to be discovered by the microscope. Of the 1,082 cases, twenty per cent. showed by the microscope latent malaria which undoubtedly was the cause of affections diagnozed under a different name. A large number were cases diagnozed as chronic diarrhœa, but, after the presence of the malarial parasites were discovered, speedily yielded to treatment by quinine. During the past summer an epidemic of what was called chronic diarrhea prevailed to an alarming extent in a village on the Hudson River. The ordinary remedies failed to produce relief. A leading physician, Dr. J. E. Moith, lead by the fact that an extensive sewer was being built through the place, and observing a slight intermittent character in the diarrhea subjected the blood of a patient to a microscopic test, when the malarial parasite was discovered. A change in the treatment, to quinine, was speedily followed by entire recovery. The disease was not simply chronic diarrhea, but malarial diarrhea—the real cause

so masked that it could only be detected by the microscope. We might instance cases in which pulmonary tuberculosis and general consumption were clearly defined which on microscopic examination of the blood showed distinctly the malarial parasite which was probably the original cause of the trouble. In many cases not too far advanced the destruction of the parasite by malarial remedies was speedily followed by a disappearance of tuberculous symptoms, and entire recovery. In our own experience we were requested to see a lady supposed to be in the last stages of consumption. The fact that she was living in a malarial district lead us to make an examination of the blood; the malarial parasite was discovered and a few doses of Wauburg removed the leading symptoms and paved the way for a speedy recovery. The report of the Surgeon-General speaks in the most emphatic terms of the importance of blood examination in all cases of obscure diagnosis, especially in localities known to be malarious, as latent malaria which so often complicates other diseases invariably injures the patient's chance of recovery, which, if discovered in time, might prevent a long period of suffering, and oftentimes a fatal termination of the malady.

SCIENTIFIC STUDY OF BRAINS.

PROFESSOR BURT GREEN WILDER, who is at the head of the department of neurology and vertebrate zoölogy and physiology at Cornell University is seeking for new facts in the development of mind by a careful study of the physiology of the brain. For this purpose he is making a collection of the human brains to be studied with all the resources of science and asks for contributions from as many gifted people as possible to give him their brains when they are quite sure they have done with them. It is said that the late Elizabeth Cady Stanton promised her brains to Professor Wilder, but if this is so she probably changed her mind at the last as there is no mention made of the bequest in her will. It is also said that Professor Goldwin Smith and several other persons of consequence in the world have made the same promise. In a strictly scientific spirit Professor Wilder is trying to determine a question which has been the subject of much discussion, whether the bent of the human mind and character can be sensibly determined by changes or development in the brain, produced by the training of the young. Can men be given a cerebral development which is greatly in advance of their inheritance or are they merely the creatures of heredity? Was Webster's power altogether born in him because he was endowed by nature with a gigantic brain? Can we make Websters out of little Thomas and Richard and Henry by taking them in time and building up great brains within them? This question which has recently occupied the attention of scientists in brain study with so many diverse opinions Professor Wilder proposes to answer from a purely scientific standpoint based upon investigations of the brain itself. Professor Elmer Gates, from a different line of study, contends that the brain can be built up by proper training and food and its different organs developed to a remarkable degree and directed in the line of work most desired. The opportunity now offers itself to any one desirous of contributing to scientific work of bequeathing their brains, after they are through with them, to Professor Wilder, to add to his already large collection.

A NEW OUTLOOK FOR THE MEDICAL STUDENT.

APROPOS to the opening of the medical schools, and the fact that—in spite of increasingly severe entrance requirements, and the diminishing chances of speedy establishment in a lucrative practice—there seems to be no permanent falling off in the number of men applying for admission to them in every part of the country, the *Boston Medical and Surgical Journal* advances some reassuring considerations, as follows:

"The overcrowding of the profession is a bugbear which should deter no earnest student from the choice of medicine as a profession. There never was a time when men were more needed than now, that medicine is ramifying into innumerable branches requiring special investigation and special preliminary equipment. The ordinary branches of medical practice in our large cities have sufficient representatives to care for the general health of the community—of this there can be no doubt. We are overstocked with operative surgeons, and are certainly adequately supplied with physicians; we question also, whether the so-called specialists are all busy all the time. But what we must learn and what we should, above all, impress upon the coming classes of medical students is the fact that, important and indispensable as it is, practice does not represent the whole of medicine, and that where work is really needed, too often no workers are to be found. How many men have we, for example, working on physiological chemistry, how many on the special branches of pathology, how many on the subtle questions which lead beyond ordinary bacteriological technique to questions of immunity and like problems? The time has apparently not yet come, but we are confident that before long a goodly proportion of students entering upon their medical work will look forward with less eagerness to the distinction of a large medical practice than to the accomplishment of a definite piece of scientific work as their contribution to their profession."

"MOTHER" EDDY'S LATEST BACKDOWN.

THE order recently sent forth from the seat of the oracle, at Concord, N. H., that, "Until the public thought becomes better acquainted with Christian science, the Christian scientists shall decline to doctor infectious or contagious diseases," plainly amounts to an injunction on this class of "healers" from meddling with *any* serious acute cases. For how (as the daily *Times* puts it) are these ladies and gentlemen, "with their vaunted inability to see any difference between one disease and another, to perform what is often

the hardest task of trained doctors who are also trained biologists—the task of diagnosis?" In the face of this difficulty, they will probably confine their practice to the comparatively safe and more lucrative field of chronic maladies—unless, indeed, the decision just rendered by the United States Supreme Court in the case of a school of magnetic healing should result in freeing them from the dread of criminal prosecution. Public sentiment, however, having been so strongly manifested through the newspapers, the shrewd healers of the miserable delusion will most likely prefer to obey the latest mandate from Mrs. Eddy, or the secret council which exercises her authority. That, at all events, will be so much gained on the score of humanity in the treatment of the helpless sick. If this effect shall fail to be speedily produced, then (as advised by the *New York Medical Journal*) let the wording of the sanitary laws be so amended as specifically to impose the full burden of technical professional responsibility, not merely upon "physicians," but upon all persons who practice healing (other than by gratuitous efforts for the relief of members of their own household) by any method whatsoever. The clause in parenthesis would cover every possible legitimate exemption from the burden of professional liability.

TYPHOID FEVER FROM IMPURE WATER.

PREVALENCE of typhoid fever in this city during the last few months has brought out from Dr. A. Seibert, in a statement as to the causes and prevention of typhoid fever and cholera. Dr. Seibert says that one person in every eight thousand in New York City dies annually of typhoid fever, and declares that the germs which cause this fever are taken into the system in drinking water in 999 cases out of 1,000, and that the only remedy is the purifying of the waters from the Croton district by filtration, which he estimates could be done by a cost of $6,000,000. Dr. Seibert illustrates what proper filtration will do in the way of eradicating typhoid fever, from statistics taken from the charts of the city of Berlin, in Germany. From 1843 to 1852, the city used unfiltered water, and during that period one person out of every nine hundred in the city died of typhoid fever. Between 1883 and 1893, a part of the old wells in the city had been closed, a filtering plant had been installed in the old water works, and the mortality from typhoid was reduced from one to nine thousand. In 1893 new water works were put in with a modern filtering plant, and the mortality from typhoid dropped to one in every fifty thousand, and is decreasing each year. In the cities of Hanover, Breslau, Magdeburg, and Hamburg these conditions have been duplicated in the last two decades. The facts in reference to the necessity of filtering water in New York City apply with equal force to the water supply wherever obtained in all cities, from public streams which may be more or less contaminated by the filth drained into them from the surrounding country which are liable to contain typhoid germs. In every case a careful analysis of the source of the supply should be made and filtration used if necessary.

TUMORS DESTROYED BY INJECTIONS OF BOILING WATER.

DR. JOHN A. WYETH, of this city, gives, in a recent issue of the New York *Medical Journal*, the details of his practical experience during the past two years, and his marked success in treating tumors with injections of boiling water. He promises a more extended report of his work at the next meeting of the American Medical Association, at New Orleans, in May. Dr. Wyeth says:

"The quantity of water employed and the temperature should vary with the size and character of the tumor. In the arterial and venous tumors of large size, the needle is thrust deeply into the mass, and from thirty to sixty minims of water are injected. The needle is then withdrawn from one-half of an inch to an inch, and the operation of injecting the boiling water is continued until the entire tumor is solidified.

"The water should be hot enough to coagulate the blood and the albuminoids of the tissues immediately, but it should not be forced in so extremely hot and under such pressure as to scald and produce a necrosis of the skin."

Three forms of vascular tumors were treated by Dr. Wyeth—the arterial, the capillary, and the venous. In operating on what are known as "mother's marks" on the eyelid, nostril or margin of the lip, he employs a small instrument with a delicate needle. In these cases the water used is a little below the boiling point. Small quantities of water are injected, and the operation is repeated after a week or ten days.

In larger tumors the water is kept at the boiling point while the injections are being made. For this purpose he has devised a long metal instrument, under the barrel of which, while the operation is in progress, a Bunsen burner is held, thus maintaining the high temperature of the water in the barrel of the syringe.

During the treatment the patient is put under the influence of narcotics. Dr. Wyeth adds that in no instance in his experience did any painful symptoms or septic reaction occur.

BLOODLESS SURGERY.

THE brilliant success which has attended the work of the Vienna surgeon in his visit to Chicago and afterwards to other prominent cities, in a bloodless surgery, through which results have been reached hitherto unattainable by the knife, or by the best work of our ablest specialists, has created a marked sensation—not only in the profession, but throughout the entire community. Congenital deformities which have been considered lasting, admitting of no relief, are now, by the process of Dr. Lorenz, when taken in time, placed on the list of curables. The success of Dr. Lorenz's treatment has created such enthusiasm

throughout the entire community that not only funds are being subscribed by wealthy philanthropists for free treatment of the poor, but strong efforts are being made for State funds to establish institutions for the special treatment of these hitherto incurable cases. In this connection we might refer to the judicious combining of the better features of the so-called osteopathy work which is undoubtedly on the same line as that of Dr. Lorenz. It is needless to say that the practical study of this treatment should be introduced into all our medical educational institutions, as a most important and valuable adjunct to general surgery. It has been clearly shown that many severe troubles, unyielding to the knife or drugs, can be diagnosed and controlled by scientific manipulation, and a thorough knowledge of these facts should be added to, and form a part of the repertory of every surgeon.

SALEM H. WALES.

BUT few of our prominent citizens who, during the past decade, have passed from mortal to immortal life have left a more enduring record or a more grateful memory of work well performed in the service of the city than the Hon. Salem H. Wales, whose body, on the 5th of December, was carried from St. Thomas' Church to its final resting place, at his country home, at South Hampton, L. I. In the various departments filled by Mr. Wales in the city government, his administration was marked by energy, tact, originality, and thorough efficiency. His interest was not confined to the various departments of public work which he so ably filled, but extended in a rich degree to the general welfare of the community in arts, science, social life and the great works of charity. It was in a great measure through his energetic work that the present building of the Union League Club was erected, and to his influence, more than any other, the Hahnemann Hospital is indebted for its present building. Mr. Wales was born in Wales, Mass., but came to this city in early life, entering a mercantile establishment as a simple clerk. In a short time, however, he entered the employ of Munn & Co., patent agents, and became one of the editors of the Scientific American, which under his direction soon became one of the ablest scientific journals in this country, if not in the world. Loyal in his friendship, wide-reaching in his philanthropy, he could leave no brighter heritage to his family than his noble life and unspotted name.

ABORTIVE TYPHOID.

CASES of fever showing a gradual daily exacerbation, with morning diminution, but not to the normal point, and closely resembling in their general symptomatology, true typhoid fever, but defervescing within a week or ten days, are of comparatively frequent occurrence and they are especially noted at seasons when genuine typhoid is prevalent. A generation ago, such cases were usually termed abortive typhoid, and many practitioners went so far as to speak of "breaking up" typhoid, or aborting a threatened attack. For some years it has been generally taught that this conception and the claims based upon it, are entirely false and that, from the beginning, a fever either is or is not typhoid, and that a typhoid infection must inevitably manifest itself by a more or less typic course of at least three or four weeks.

So long as the definition of typhoid depended upon the description of its clinical course, this attitude was eminently proper, and the modern teaching has done much to dissipate the claims of the medical charlatan, outside or inside the regular fold. In the light of still more recent pathologic and bacteriologic research, we believe that the question should be reopened, not with the view of supporting or disproving claims of superior medical skill, but as a matter of abstract scientific knowledge, and of practical sanitary and diagnostic deductions.

Not to present a personal conviction, but for convenience in suggesting a line of scientific investigation, we will cite certain *a priori* arguments in favor of the existence of "abortive typhoid." First, and most important of all, it is scarcely logical to insist that a given, specific infection must be characterized by a nearly definite clinical course, either in point of time or intensity. This point is particularly well taken as regards a disease of considerable duration. We may well be sceptic when an infection, ordinarily of fulminant nature, assumes a chronic course, yet prolonged tetanus, anthrax and cerebro-spinal fever are well established, and even hydrophobia is acknowledged to be marked at times by a long period of latency. On the other hand, the shortening of a continued or chronic infective process is by no means so difficult to conceive, and, in regard to tuberculosis, we have the most indisputable evidence that the implantation of specific germs may result in any degree of disease from a brief, or, perhaps, unnoticeable indisposition, whose pathologic anatomy is found years afterward at a necropsy, to a chronic process of years' duration, and including all intermediate grades, including one form that is clinically almost indistinguishable from typic typhoid. Especially in regard to diphtheria, we have evidence of what may be termed imperfect infection. In other words, individuals who have diphtheria bacilli in their throats, may be entirely free from disease, or may present the symptoms of a catarrhal or lacunar amygdalitis, without a pseudomembrane.

It is utterly untenable to suppose that every person who swallows one or more typhoid bacilli, falls a victim to the disease. Is it logical to hold, as does the present orthodox view, that there can be no middle ground between an entire absence of reaction to ingested typhoid bacilli and a fairly prolonged and typic attack of the disease?

Such an opinion is contrary to the analogy of other diseases, it postulates arbitrary and peculiar properties

of the disease-reaction for typhoid, and it is supported by purely negative evidence.

As we have said, we do not take sides upon this issue, but we do believe that the dogmatic assertion that brief febrile attacks, which appear to present the initial symptoms of typhoid, are of entirely different nature, can no longer be maintained without a reopening of the case and a careful re-examination of the evidence. The crucial test of the individuality of abortive cases is the isolation of the typhoid bacillus. This method, however satisfactory in theory, is still largely impractical because of the difficulty of detecting the germ when it is present in small numbers. For instance, a municipal water supply which is obviously and unquestionably the source of an epidemic, often, or even usually, evades the search of the bacteriologist. Similarly, the blood and excreta, often fail to respond to culture tests unless the infection is massive. Possibly the use of very large culture beds, such as Vaughan, of Michigan, has employed to produce toxins on a large scale, may serve the purpose of detecting typhoid which eludes ordinary test-tube and plate methods.

The Widal reaction, though not absolute, is easily applied, and the results of a large series of tests of abortive typhoid, so-called, would be of considerable value as evidence. Personally, we can cite only one such case, and, in this, there was a moderate Widal reaction. But it is a common experience to find such atypic reactions in cases that have never had a distinct run of typhoid, and it is a question whether the imperfect clumping of a typhoid culture is due to the previous occurrence of an abortive typhoid or to some other factor, for instance a partial immunity by other bacteria.

The impression is gaining ground that we have no other continued fever than typhoid in the temperate zone of America, except under peculiar local conditions, or owing to the atypic manifestation of some equally well known infectious process. Malaria is practically extinct in many localities and, at any rate, is now easily determined by blood examinations. Tuberculosis, even more frequently than has been taught, may appear as an acute fever, without localizing symptoms of diagnostic value, or discharge of bacilli. Unfortunately, the tuberculin test does not seem to be reliable for human beings, possibly on account of the tendency to febrile reaction of nervous origin, which is not likely to occur in cattle. Intestinal toxemia, in other words, usually a partially infectious process due to increased virulence of the colon bacillus, may simulate typhoid, but, here, we should expect to find marked indicanuria, and the symptoms ought to subside rapidly after a calomel purge and reduction of the intestinal putrefaction by diet and antiseptics. In this connection, it may be hinted that much of the symptomatology of typhoid is due to non-specific, complicating, intestinal sepsis. Para-typhoid has been demonstrated in certain cases of apparently genuine typhoid infection, whether of short duration or pursuing a fairly typic course. But the diagnosis of a "para"-infection, is not yet satisfactory, either from the standpoint of diagnosis or from that of our conception of the nature of the symptom-complex. In other words, it is important to know whether a para-disease is due to a related, but specifically independent micro-organism with regard to the ordinary cause of similar clinical manifestations; or whether the para-germ is a botanic *variety* of the ordinary one, and if so, whether the variation is permanent so that by cultivation, the original properties of the bacterium cannot be restored, or whether, on the other hand, there has merely been a more or less transient mitigation or modification of the germ. A very practical scientific point in this connection is, as to the occurrence of agglutination of the culture of a specific germ, by the products of other germs. Some degree of agglutination of typhoid bacilli does occur with so-called para-typnoid, but the true significance of this reaction, especially with regard to the botanic relations of typhoid and para-typhoid bacilli is not yet understood.

The practical diagnosis of typhoid from other febrile processes, such as appendix inflammation and other septic conditions, although important, is scarcely germane to this article.

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No student or physician can keep in touch with the finer work of science unless he is to a certain extent familiar with microscopic work. To those of the profession who are unable to avail themselves of a post-graduate laboratory course and who must work without the advantage of the personal guidance of a teacher, this book will prove of great value. The directions are plain, and are all that are required to the beginner, later more extensive works will be studied with more intelligence.

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In announcing this series the publishers stated that the individual volumes should authoritatively cover their respective subjects in all essentials, and that the maximum amount of information in letter press and engravings should be given for a minimum price. This is the second volume of the series, in both of which the announcement of the publishers have been ably carried out, both by editor and authors.

A MANUAL OF DISSECTION AND PRACTICAL ANATOMY FOUNDED ON GRAY AND GERRISH. By William T. Eckley, M.D., Professor of Anatomy, and Corinne B. Eckley, Demonstrator of Anatomy in the Medical and Dental Departments of the University of Illinois. In one octavo volume of 400 pages, illustrated with 220 engravings, 116 of which are colored. Cloth, $3.50 net. Lea Brothers & Co., Publishers, Philadelphia and New York.

The present work not only provides the student with a detail guide for dissection, but also meets the requirements of the physician or surgeon who may desire to review the anatomy of any region. The text is clear, and the illustrations as accurate as skill and science can produce. Colors have been freely used and the engravings are so large that in most instances the names of the parts have been printed directly upon them, thus furnishing the utmost aid as well as maximum convenience to the student. The work will prove invaluable not only in the dissecting room, but in the office of the physician and surgeon.

THE STORY OF A LIVING TEMPLE. A Study of the Human Body. By Frederick M. Rossiter, B.S., M.D. and Mary Henry Rossiter, A.M. 1902. Fleming H. Revell Company, Chicago. 348 pp. 12mo. Price, $1.00.

The author has attempted to popularize the study of the human body, especially by the young, treating the subject metaphorically in order to engage the attention of the reader. The object is to show the human building as a master-piece of creation, worthy of admiration, and jealous care. The book will be found interesting and instructive by those for whom it is intended.

REGIONAL MINOR SURGERY. Describing the treatment of those conditions daily encountered by the general practitioner. By George Gray Van Schaick, M.D., Attending Surgeon to the French Hospital, New York. 226 pp., illustrated, 12mo. Price, $1.50. International Journal of Surgery Co., New York.

This work is devoted to minor surgical technics, but the same amount of care has been bestowed upon the treatment of each individual condition as is generally accorded to subjects of major surgery. The aim throughout has been to provide the general practitioner with a book that will afford him such practical information as he can utilize in his routine surgical work. No space has been taken up by theoretical discussions, each subject being treated in a clear and concise manner, yet omitting no detail of importance. While in many surgical affections a number of methods are applicable, the writer has selected only those which in an extensive experience of nearly 20 years in hospital and private practice have proved most satisfactory.

MEMORANDUM ON POISONS. By Thomas Hawker Tanner, M.D., F.L.S. Ninth revised Edition. By Henry Leffmann, A.M., M.D., Professor of Chemistry in the Woman's Medical College of Pennsylvania etc. Philadelphia: P. Blakiston's Son & Co. 1902. 177 pp. 16mo.

This very popular multum in parvo has been revised to date. It is the hand-book par excellence on the subject, for the general practitioner and student of ordinary requirements.

BIOLOGICAL LABORATORY METHODS. By P. H. Mell, Ph.D. Director of the Alabama Experiment Station; Professor of Geology and Botany, Alabama Polytechnic Institute. New York: The Macmillan Company, 1902. 321 pp. 12mo. $1.60.

This is a text-book for students for which purpose it is eminently fitted, as it deals with subjects in simple language, in a practical manner, and in sufficient detail to convey a clear comprehension of the work to be done.

The book will certainly be appreciated by the student in this department.

DIABETES MELLITUS: ITS TREATMENT AND CURE. Published by Chas. Roome Parmele Co., 43 John st., New York.

This little pamphlet contains the clinical reports of some 15 practitioners, on the use of Arsenauro and Mercauro in diabetes. It is worthy the perusal of any one having a case to treat. A copy of the report will be sent upon request to any physician mentioning this Journal.

A TEXT-BOOK OF THE SCIENCE AND ART OF OBSTETRICS. By Henry J. Garrigues, A.M., M.D., Consulting Obstetric Surgeon to the New York Maternity Hospital, late Professor of Obstetrics in the Post-Graduate Medical School, etc., with 504 illustrations. Philadelphia and London: J. B. Lippincott Company, 1902, pp. 844 octavo.

The author says his aim has been to write a text-book and not a book of reference, of which there are plenty, and his work is based upon his large personal observation and research.

The reader is led gradually from the simple to the complicated, from the easy to the difficult, in the most practical way.

The work is profusely illustrated, and as far as possible, objects are represented in their actual size, thereby greatly enhancing the usefulness.

The author's well-known standing and long experience is sufficient guarantee as to the quality of his work.

—Neoferrum is a new preparation of Malto-peptonate of iron and of manganese with a minute quantity of arsenic, combined with a very pleasant and palatable elixir, with Maltine and sherry wine, neutral in reaction, slightly laxative, and does not injure the teeth. The experienced clinician will at once see where it belongs.

CORRESPONDENCE.

THERAPEUTIC OXYGEN IN CARDIAC TROUBLES.

To the Editors of the MEDICAL TIMES:

The most cursary survey of the cardio-vascular diseases, forcibly recalls the oft-reiterated complaint of the illustrious Laennec, "the father of mediate auscultation." With the modesty of genius, he lamented the ignorance of his brethren and himself, as to the structure and functions of the heart, its maladies and their symptoms; and declaimed with Gallic fervor on the uselessness of treatment and the failure of current remedies. His complaints and admissions have been re-echoed by every subsequent authority, and the therapy of heart troubles is still a comparative chaos, slowly emerging into light and order at the fiat of medical science.

Still it is discouraging to reflect that after a whole century of progress, during which the average of life has been greatly lengthened, the mortality from cardiac diseases has shown a steady increase. The old taunt of the skeptic, "Physician, heal thyself," might be re-furbished for use—or abuse—in this connection, for no less than 35 per cent. of the deaths among the medical profession in New York are due to the sequels of that "doctor's disease," arterio-sclerosis—Bright's apoplexy and heart trouble, and this proportion seems to be nearly constant in all civilized countries.

Even the first count in Laennec's sweeping indictment is still true in a minor degree. Recent researches, among which we may mention those of Porter on the vaso-constrictor fibres of the heart, and those of Kaehl and Carl Hirsh demonstrating the structural and functional independence of its divisions, reminds us that our knowledge is still incomplete. True, the cardiac centre with its arteries and veins, is no longer considered a mere force-pump with hydraulic pipe attachments; but we are still in the dark as to the precise nutritive, oxygenating, venin-resisting and metabolic functions of the latter, and the exact division of the labor of the circulation between them and the heart.

Even in dealing with etiology and symptoms, progress has been more apparent than real. Since Laennec taught, Bacteriology with its enormous wealth of fact and detail, has utterly transformed the whole theory of disease; and the modern physician is nearly as much embarrassed by his badly assorted riches, as his confrere of 1800 was by his want of material and instruments of precision. Hence the terminal results are equally disappointing. Though it is hardly necessary to demonstrate what no candid reader will deny, the briefest glance at the daily difficulties of the general practitioner may not be lost on the ultra conservative, and will best illustrate our suggested procedure.

At a recent meeting of the New York Therapeutic Society, Dr. Satterthwaite stated that in 70 per cent. of his cases of mitral stenosis no murmur at all could be heard, and that out of 164 cases of tricuspid-stenosis, the diagnosis had only been made out in 6. Shattuck says that valvular aneurism betrays its presence by no distinctive marks. There is no certain method of distinguishing clinically between aneurism, fibroid disease without aneurism, and fatty degeneration, when any of the three lesions are extensive enough to cause symptoms at all. Loomis maintains that it is almost impossible to discriminate between fatty degeneration or infiltration and chronic endocarditis. We need not lengthen the category.

Enough has been said to justify the conclusion that diagnostic error with consequent danger is almost inevitable, owing to this complex obscurity of symptoms; and in meeting these manifestations with the most toxic drugs, the risk is doubly increased.

Laennec's third complaint as to treatment with useless or dangerous remedies is still as valid and applicable as ever. A correct diagnosis is essential to a rational and effective therapy, but a glance at the latter is not reassuring. Let us instance digitalis. At the meeting alluded to the divergence of opinion as to its merits were pronounced, and the same differences were apparent in discussing the entire list of heart tonics and sedatives. Dr. Porter said: "When the normal tension of the heart has been restored, the action of digitalis is detrimental to all the functions of the body. In aortic lesions digitalis is contra-indicated, also in fatty degeneration or any enfeebled condition of the heart muscles and is dangerous in hypertrophy. The drug is of service only for a few days at a time, at the longest." Dr. Barnes on the other hand, said he differed very decidedly with this author on the selection of cardiac remedies, and asked why he preferred caffein to digitalis since their action on the heart was identical. Another speaker preferred strychnia followed by arsenic and declared that many practitioners were abandoning digitalis altogether, owing to its uncertain action and often positive danger. On the other hand, many authorities, like Loomis, advise that in cases of dilation, digitalis should be used "for a long time." Shattuck frankly admits that "the authorities disagree as to its mode of action;" that it is useless in many cases; but that "the drug may be kept up for years" in others.

Undoubtedly, these opinions embodied the experience of the author, but who can reconcile them? *They certainly emphasize our previous contention, that in dealing with unknown or doubtful symptoms, more satisfactory results would be obtained, if a harmless remedy, whose therapeutic virtues were definitely proved, were substituted for the lethal drugs at present in use, and whose action cannot be predicted in any individual case.*

Returning to nature for this curative and in reality to the true Hippocratic medicine, we find an answering remedy in that great agent of physiological change, Oxygen. Isolation and a new combination will render this most potent of the vital forces, equally important in pathological conditions. It meets all the requirements of a cardiac safe-guard, prompt and powerful in collapse, perfectly safe on all occasions, and without a time limit as to its use. The fact that oxygen was administered to counteract heart failure, is duly chronicled as part of the pomp and circumstance attending the demise of Kings, Czars and Presidents; and occasionally mortals of ordinary flesh and blood are spared an untimely taking off by its means. Among the latter, a striking case of pneumonia, complicated by typhoid, was recently detailed by Dr. Richmond. The fact that the pneumococci of Frankel do not thrive in oxygen, suggested the use of that gas, and the patient made a good recovery. When this treatment was initiated, only the upper lobes were intact, and this fact specially indicates the chief cause of failure in oxygen medication. We most emphatically decry the practice of administering the gas *only as a last resort to the moribund and comatose. It should be given the same opportunities in disease as the commonly accepted remedies.*

We have dwelt a little on the above case, because it afforded ample scope for the display of the four marked characteristics of remedial oxygen, as best defined by the late Sir Benjamin Richardson—stimulating, nutrifying, eliminating and rest-inducing. We also most thoroughly agree with him that oxygen *per se,* is not the

best medium for inhalation. The acme of therapeutic excellence is obtained by creating a new atmosphere, as fitly adapted for disease as our ordinary atmosphere is for health. By increasing, largely, the percentage of oxygen and combining an oxide of nitrogen, in order to hasten its solubility in the blood, all its potencies are greatly intensified, and a prompt, powerful and lasting remedy for many forms of heart trouble is at the disposal of the practitioner. Daily experience in these and other diseases has corroborated the theory of its action, and will bear a brief resumé.

As "a vital stimulus" (so-called by Paul Bert), inhalatory oxygen is at once absorbed into the blood-stream, and its revivifying action is immediate. We have known very many cases, where atrophied, fatty, fibroid, infiltrated and softened hearts were kept in action solely through this vital gas. Much light is thrown on these facts if we accept Draper's theory that oxygen is the main cause of the circulation in animals with or without hearts, and that its lessened supply or deprivation entails slowing up or total stoppage of that organ. The blood itself assumes a new role, if we believe with most pathologists, that arterio-sclerosis, the parent of much heart trouble, commences in that most wonderful of all fluids.

Nutrition.—The complete restoration of normal function is the end which fully crowns the physician's work. In health, the amount of nutrition demanded is in direct accordance with the volume of inspired oxygen. It governs the income and expenditure of the body under every possible shape. This supremacy in health of the ordinary gas in the atmosphere is magnified in the curative oxygen we have described. It compels nutrition, which is so frequently the upward or downward turning point in disease. In the digestive maladies which complicate heart trouble—Dr. Garnier says to the extent of 17 per cent.—and for the integrity and due activity of the oxygen ferments throughout the body, the necessity for this gas is obvious.

Elimination.—Side by side with its stimulating and nutrifying remedies this potent remedy exhibits its great eliminating qualities. The toxins which now occupy such a prominent place in disease are neutralized. The poisons of rheumatism, gout and other "diseases of suboxidation," together with the pathogenes which cause or accompany them, such as the diplococcus found in "malignant" endocarditis by Poynton and Paine, are best met by exhibiting oxygen. That this toxemia is an unsuspected factor in many diseases is exemplified by Dr. Hyslop who found it in one-half of 2,446 cases of insanity, and causal factor in heart trouble.

Rest.—In all functional disturbances and degenerations, rest must be strenuously insisted on. It is the one condition of life, in most cases of heart maladies. By varying the proportion of the combining oxide, the rest-inducing properties of the compound can be raised to any required potency, and as it is immediately eliminated, there are none of the injurious cumulations, after-effects, or "habits" of drug hypnotics. As to the very distressing neurasthenia, which is commonly associated with heart trouble, we may quote Huxley: "Overwork means under-oxygenation," and Sir James Sawyer: "Chronic invalidism is chronic suboxidation." The one-third of our lives, which we pass in the vitiated air of our bedrooms has its evil share in all diseases of the circulation.

Before closing our necessarily imperfect summary of the remedial properties of oxygen, the following points should be borne in mind: The gas should be freshly evolved. Stale oxygen is useless and even dangerous. It should not be subjected to great pressure or extremes of temperatures, and should be contained in easily portable vessels. As extreme care and an expensive installation are necessary for its manufacture, it is better for the practitioner to buy from a reliable specialist.

The time seems ripe for a thorough test of the virtues claimed for it, and justified by its records in a very extensive literature. Even if it does not always duplicate ancient miracles and rescue souls from the under-world, we humbly think it will "relieve the circulation" in a safer way than Sir Lander Brunton's recently suggested "incision of a stenotic mitral ring by a narrow-bladed tenotome." Against such a heroic remedy in heart disease, stenotic or otherwise, we forcibly protest, as Rousseau did when more bleeding was suggested: "Do not kill me, gentlemen, but let me die in peace."

* * *

ALUMNI DINNER.

At the annual dinner of the Alumni Association of the Metropolitan Hospital, sixty-two members of the association were present and passed a pleasant evening in reminiscences of official work and congratulations on the prospects for the future. Dr. Egbert Guernsey Rankin, in reply to the toast, "The Medical Board," said in part, "That during the preceding eleven months there have been 1,330 visits of the Medical Board, and 545 operations. The weekly clinics are well attended, and are conducted on the sectional bedside plan, the students thus being brought in direct contact with the patient. Within the past year a Tuberculosis Infirmary has been established in connection with the Metropolitan Hospital. This infirmary, for the exclusive use of tuberculous patients, is the first and only one of the kind under the control of the municipal authorities of the city of New York. Mr. Folks, the present Commissioner, in addition to the establishment of the Tuberculosis Infirmary, a work which will always distinguish his administration, and for which the city of New York owes him a debt of deepest gratitude, has further plans of improvement under consideration in the form of ophthalmic—male venereal, and erysipelas wards; also a new dock directly adjacent to the hospital. The Metropolitan Hospital is the largest hospital in the world under the auspices of the so-called Homeopathic School of Medicine. It is now the largest in the department, the second largest in the city of New York, and when certain contemplated changes are made, it will probably contain nearly one thousand beds. The Metropolitan Hospital, now, after a quarter of a century of existence, stands as founded for the Homeopathic principle in medicine, for freedom of medical thought, and for true medical unsectarianism."

A LENS REVOLUTIONIZING PHOTOGRAPHY.

Dr. Edward F. Grunn, of Briton, Eng., has discovered a lens which is making possible achievements in rapid work in photography, which have hitherto been thought out of the question. By using a certain oil between the parts of a rectilinear lens, the refraction is so increased that instantaneous photography may be made in the ordinary light of a theatre. A photograph is taken at midnight on a pitch black night in 15 minutes. Another is taken at midnight with a fair moon with one minute exposure. A photograph may be taken in a theatre, the footlights only being used, in a ¼-second exposure, and one in an ordinary room with an exposure of five seconds. Never before in photographic history has there been a lens so extremely rapid as this.

RETROSPECTIVE THERAPEUTICS.

Creosotal in Croup.—The excellent results obtained from Creosotal in the treatment of acute and chronic diseases of the respiratory organs incited Dr. L. Lazansky to test the remedy in croup. The difficulties, such as late calls, the absence of proper nursing, the impossibility to operate on account of lack of assistance, the frequent unwillingness to permit the transportation of the patient to a hospital, etc., which the physician—especially in country towns—encountered in the treatment of croup, make a simple remedy devoutly to be wished for; and the author therefore advises every colleague to test the efficiency of Creosotal.

Medical Treatment of Phthisis.—Dr. Geo. D. Barney of Brooklyn in reviewing the therapeutic treatment of phthisis, has found after long experimentation that Kresamin will destroy the bacillus without injury to healthy tissue, the vapor being singularly unirritating. The vapor can be used in the ordinary nebulizer but the pneumatic cabinet is an invaluable adjunct, allowing the remedy to penetrate much more deeply. The method is certainly worthy of trial.

Mesotan.—A New Local Antirheumatic. In *Deutsche med. Wochenschrift* for October 16, 1902, Dr. T. Floret, of Elberfeld, reports the results of his clinical investigation of a methyloxymethylester of salicylic acid (formula, $C_6H_4\overset{OH}{\underset{COO}{}}CH_2.O.CH_3$). This is known as mesotan, and is a clear yellow fluid, almost odorless, and miscible with oils and other organic solvents. It is readily absorbed by the skin and then easily decomposed by the tissue fluids. Shortly ofter its application, salicylic acid can be detected in the urine. Experiments were made for over half a year in 120 cases. In those of clearly marked rheumatism mesotan never failed to manifest the desired effect. This occurred so promptly and constantly that in articular and muscular affections of doubtful character it served as a diagnostic measure, since it was never found that the drug had the least influence upon *non*-rheumatic inflammations. The most brilliant results were obtained in acute muscular rheumatism, especially in rheumatic lumbago, the pains subsiding after the rubbing in of mesotan, and the edematous swelling and the stiffness disappearing on the average in two or three days. In acute articular rheumatism its action was equally satisfactory.

As to the mode of employment, even when applied to extensive areas, one teaspoonful is entirely sufficient, and two or three applications a day are enough. It is to be rubbed in gently over the affected surface, and it is not necessary to apply any covering to the parts. A feeling of slight itching and burning of the skin is first experienced, after which the pains at once subside.

Pansy Tea in Acne.—Behrmann has found that a tea or decoction of the viola tricolor has a remarkable curative action in cases of common acne. Mandel has announced that this herb contains salicylic acid and magnesium tartrate. The action of the heat and of the salicylic acid causes sweating, and excretion through the sebaceous glands is also increased and softened. The acid has also a dissolving effect on the horny plugs in the sebaceous glands of the acne patches. The magnesium tartrate loosens the bowels at the same time, while the antizymotic action of the salicylic acid checks absorption from the intestines. The pansy tea has cured in his experience cases rebellious to all other measures, and its simplicity, cheapness and agreeable taste have rendered it very popular in his practice. It is necessary, however, to have patients return often to be inspected, as impetigo may develop under a tight collar, as occurred in one of his cases, if the patient is not supervised and the spot disinfected as soon as a pimple appears.

New Method of Vaccination.—The fact that during the recent smallpox epidemic at Lyons persons who had been vaccinated without effect a short time before and consequently pronounced immune were attacked by the disease, led Boigey (*Sem. Mèd.*, 1902, No. 27; *Med. Rev. of Revs.*) to seek the reason of the failure of vaccination to "take." He assumed that the virus had not entered the lymph channels, and concludes that when the virus is insured entrance into the lymph spaces successful vaccination is almost certain to follow.

He has devised an instrument with a slightly convex face of metal, attached to a handle of sufficient length, with which, after heating it in boiling water, he makes a blister at the site of vaccination.

The blister is punctured and the virus put into the serum. This procedure takes no more time, is no more painful, and is much surer than the usual method of scarification.

Solanum Carolinense in Epilepsy.—Dr. M. Clayton Thrush, of Philadelphia, has been conducting an investigation of Solanum Carolinense with reference to its special value in the treatment of epilepsy. The drug was tried on about 25 cases of the disease in its various forms in four Philadelphia hospitals. The results were very satisfactory. Dr. Thrush has published the following conclusions in the *Philadelphia Medical Journal* (May 3, 1902): 1. It is of the greatest value (probably better than any known remedy) in grand mal of idiopathic type without heredity and where the disease has begun beyond the age of childhood. 2. It is perhaps of next greatest value in hystero-epilepsy with marked convulsive seizures. In cases of petit mal the drug does not seem to do the great good that we have noted in the major type of the disease. 3. In cases of well-advanced epilepsy of any type in which there is degeneration of the cerebral neuron, the drug will act specifically for a time even better than the bromides, but it will finally be determined that the bromide salts will ultimately control the attacks better in these cases. 4. The foregoing clinical study has brought out sufficient clinical evidence to warrant the statement that the inherent advantages of vegetable depresso-motors is great as compared with any mineral salt given with the same intent on account of the destruction of the blood corpuscles by the latter. 5. A cure can alone be hoped for in proportion as solanum is pushed to the fullest physiological dosage and maintained through periods of months. 6. The freshly made fluid extract given in ascending doses commencing with one fluid drachm is the ideal method of administration. 7. It is to be decidedly preferred to the bromides in those cases in which it can be used advantageously, because no toxic symptoms follow its use and it does not impair the mental faculties.

A Warning Concerning Suprarenal Medication.—*Pediatrics*, Feb. 15, 1902, in a review of an article by Dr. J. J. Kyle, says: "We are beginning just now to realize that with suprarenal extract, as with all the other vasoconstrictors of recent memory, there may be disadvantages. Cocaine and antipyrine were once

the boast of rhinology, but are now rarely used. Experience will show whether or not secondary hemorrhage is a frequent complication. Recent influenza infection with severe coryza is a disinct contraindication. The apertures to all cranial sinuses are opened and an unguarded use of the handkerchief may blow infective material into the antrum of highmore, the ethmoid cells, and the middle ear. Cases of this kind are already on record.

Treatment of Hemophilia With Calcium Chloride.—Wallis (*British Medical Journal*, May 10, 1902), reports that a woman, age 25, came to the dental department of King's College Hospital for advice as to her teeth. She gave a history of having a tooth removed two months previously at another hospital and of having a hemorrhage lasting 36 hours, which was finally arrested with difficulty by plugging. She also gave a very definite history of hemophilia, which seemed to manifest itself on the slightest provocation. It was found necesary to remove all her teeth, so she was put on calcium chloride, 10 grains three times daily for a week, when one tooth was extracted and slightly more than ordinary bleeding followed. The treatment was kept up for another week, at the end of which time three teeth were extracted with similar good results. She had then to leave London for three weeks and the last week neglected the treatment. One tooth was extracted on her return with much more bleeding than on either of the former occasions, but not requiring heroic measures. The dose of calcium chloride was increased to 15 grains and all the remaining teeth and stumps were removed with only normal bleeding.

Since the above he has had one other typical hemophiliac who was treated in the same way with similar results. No ill effects were produced by the use of the calcium chloride.

Prevention of Nausea and Vomiting Following Ether Anesthesia.—The late Dr. Ralph H. Hess concluded as follows (*Med. Rec.*): First. Post-anesthesia vomiting is a source of danger and great discomfort to the patient, and is preventable. Second. It is due to excretion of ether in the stomach, with resulting acute gastritis. Third. Drugs are of no avail in prevention or treatment of post-anesthetic vomiting. Fourth. Present technic of patient for etherization is faulty, in that fluids are usually entirely prohibited or limited, whereas they should be pushed to aid in excretion of ether. Fifth. The dose of ether should be as small as possible, and the strength of ether vapor should not cause bronchial irritation with excess of mucus. Sixth. The combined use of nitrous oxide and ether gives the best results. Seventh. In anticipation of gastric irritation, give one to two glassfuls of water just before beginning anesthetic.

Hydrastis Canadensis in Goitre.—William Cuthbertson read a paper on Goitre before the Chicago Medical Society on March 19th (*Med. News*, April 5; *Brit. Med. Jour.*). He said that goitre was a non-inflammatory enlargement of the thyroid body, either general or partial. He divided Goitre clinically into (1) vascular; (2) hypertrophic or parenchymatous (*a*) simple, (*b*) miasmatic, (*c*) exophthalmic; (3) adenomatous cystic; (4) pneumatic; (5) malignant. The goitre of puberty and pregnancy belongs to the vascular and simple hypertrophic types, and formed the principal subject for consideration in the author's paper. The different forms of treatment of the various tumors of the thyroid gland were about as numerous as the writers on the subject. With the exception of the surgical cases, the treatment of goitre seemed to have been purely empirical. In each of the 25 cases of goitre of puberty and pregnancy which came under his care, a cure was effected in from six weeks to three months by the administration of hydrastis canadensis, three times daily, after eating. He was well aware that some of these cases might have got well without treatment, but he made no selection of them, taking them as they presented themselves. One of the cases which was cured by this means had been treated, with iodine and the iodides and with thyroid extract, becoming much worse under both forms of treatment. Immediately on instituting the hydrastis treatment the patient began to improve and was cured in six weeks. He presented hydrastis canadensis as a new and successful remedy in the goitre of pregnancy and puberty.

Involvement of the Ovaries in Epidemic Parotiditis in Girls.—The ovaries are less frequently affected, according to most authors, than the testes, but this is due to the fact that the disturbances in girls are comparatively slight, and that, owing to the anatomical conditions, it is very difficult to make a diagnosis of ovarian inflammation in children. There is no doubt, however, that local ovarian pain, tenderness, and swelling do occur in parotiditis in girls, in a considerable proportion of cases. The cases cited by Troitzky (*Roussky Vratch*, April 6, 1902; *N. Y. Med. Jour.*) show unmistakably the intimate connection between the ovaries and the parotids in this infectious disease. As a rule, the ovaritis of mumps is observed in girls who have passed the age of ten years, but it may be present in younger girls. It is important in every case of mumps in growing girls to inquire into the state of the genital organs. If local counter-irritants, such as applications of iodine, cold compresses, or even vesicatories, are not necessary, the girls should at least be kept in bed with bandaged abdomens for several days, and the state of the bowels should be carefully looked after. If such care is given to these cases, we can, in the majority of instances, be assured that more serious pathological changes will not take place in the ovaries.

A New Remedy in Typhoid Fever.—The recent discovery, by Duval and Bassett, of the presence of the bacillus dysenteriæ (Shiga) in 40 cases of infantile summer diarrhea, awakens renewed interest in the subject of intestinal antisepsis. But a few months have elapsed since Drs. P. C. Freer and F. G. Novy, of the University of Michigan, demonstrated the enormous germicidal power of benzold-acetyl-peroxide, more familiarly known as Acetozone. Although the preliminary reports of these investigators were of necessity based upon results of laboratory experiments, their expectations are already being realized in clinical work, in the treatment of typhoid fever, particularly.

I. A. Abt. M.D., and E. Lackner, M.D., of Chicago, have thus far reported *Therapeutic Gazette*, October, 1902) 40 cases of typhoid, in children, treated with Acetozone, with but two deaths, a mortality of 5 per cent.

Eugene Wasdin, M.D., of the U. S. Marine Hospital Service, Buffalo, N. Y., has reported 27 cases (American Medicine, Feb. 8, 1902) of typhoid fever, 24 of which were treated with Acetozone, all of the patients recovering.

The writer states that his patients were given from

1500 to 2000 Cc. of the aqueous solution of Acetozone daily. The diet was milk diluted with the same solution. The first influence of the drug is observed in the increased secretion of urine. That this is not due wholly to the ingestion of large quantities of water, necessitated by the use of the saturated solution, is evident from the author's assertion that the same result was observed when Acetozone was administered in capsules. The second influence to which attention is directed is the very pronounced decrease of the odor of the stools, while plate cultures from the dejecta showed comparatively few germs.

The deodorant and diuretic effects of Acetozone were also observed by G. H. Westinghouse, M.D., of Buffalo (*Buffalo Medical Journal*, Aug., 1902), who used it in seven cases. This observer remarks that with the increased flow of urine "a corresponding reduction of typhoid symptoms followed, and tympanites and delirium disappeared." It should be remarked that the diagnosis in all these cases, as well as in most of those reported by the Chicago physicians, was confirmed by Widal's reaction and Ehrlich's test, and in some a blood-count was resorted to. Westinghouse concludes his paper by saying that "Acetozone, as an intestinal antiseptic, is unequaled by anything I have ever employed. A complete subsidence of all the bowel symptoms followed in every case of typhoid within a few days after beginning its use. The application of the antiseptic consisted, in most cases, in simply allowing the patient to drink the saturated aqueous solution ad libitum; or, in other words, substituting this solution for all other liquids, and urging the patient to partake of it freely when the natural craving was not sufficient to insure the consumption of considerable quantities."

Anesthesia of the Drum Membrane.—Dr. Geo. B. McAuliffe, in an article recently read before the American Otological Society, says:

Fluids which disturb the osmotic equilibrium of the drum membrane and produce minute solutions of continuity in the dermal layer, thereby allowing cocain or its succedanea to reach the nerve filaments are the best we have at present for use in the external canal.

The conditions favoring this application of cocain are: (1) The removal of foreign substances and loose scales from the drum membrane and canal. (2) Dehydration of the outer layers of the membrane—a dessication which causes molecular contraction and interstices through which the anesthetic can reach the deeper parts and nerve terminations. (3) The induction of endosmosis. The first condition is met by the use of hydrozone which is stronger and better than any other kind of H_2O_2 preparation in softening and boiling out the débris of the canal and in lessening the resistance of the dermal layer. The hydrozone is subsequently mopped out by cotton applicators or syringed from the canal. The second and third conditions are met by the use of alcohol and aniline oil. The latter is absorbed more slowly and its effects last longer than the former. The solutions used are 5 to 20 per cent. of cocain in equal parts of absolute alcohol and aniline oil. Anesthesia is gained in 10-15 minutes. To prevent toxicity of the aniline oil, a small wad is saturated, and applied to the membrane once only.

—At Madrid the Minister of Justice has recommended a certificate of health shall be required before a license to be married.

THE CLINIQUE.

THE TREATMENT OF EXTRAUTERINE PREGNANCY IN THE LATER MONTHS.

MEDICINE or electricity have done so little in this condition that the laity, as well as the great bulk of the profession have come to regard the total removal of the gestation sac as the surest and safest treatment. It is true that electricity, especially in cases of doubtful diagnosis and in regions remote from skilled operators, has its advocates, and probably there is less harm accomplished by its use than by unskilful surgery in an unsafe environment. The advisability of the radical operation in all ruptures of the gestation sac is now acknowledged, even in the desperate cases. To wait for reaction while internal hemorrhage is exhausting vitality and resorting to opium and stimulants is no longer practised by intelligent physicians. The case is somewhat different when the ectopic pregnancy has passed beyond the fifth month, and the child is known to be viable. Here we have the possibility of favorable development and the final removal of a live child which complicates the situation, the question even occurring in ethical and theological aspects. If it were known to a certainty that this development would proceed without accident after the ectopic pregnancy has passed the first half of gestation, there would be little doubt of the wisdom of delay; but the possibilities of a suddenly fatal termination are so tremendous that no dependence can be placed in this doctrine of gamble.

The woman's only safety lies in the complete evacuation of her uterus at the earliest possible moment, after a diagnosis has been made. As one writer has well said, the roads marked "delay," "leave to nature," and "expectant treatment," are so filled with tombstones and bereaved relatives and friends, that the deluded and timid advocates of these delusive and fatal practises find little room to navigate their lonely way. A physician cannot promise favorable results; but with the recent wonderful advancements of abdominal surgery we can do much more than our fathers could to save human life, even when threatened by the dangers of advanced ectopic pregnancy.

It has been the great difficulty of dealing with the placenta that has detained many operators until the child was known to be dead, and the placental vessels atrophied. Even in these the doctrine of chance has not a few advocates, for unfortunately it is true that some women have lived many years with a mummified fetus and have finally died of some other condition. Decomposition, abscess and discharge of fetal bones through bladder, vagina, rectum and abdominal wall has occurred, hence, they reason, why cannot more women survive all these dangers. My object is to recommend the removal of an extra-uterine fetus in all cases whenever possible, whether it be the second, fourth, seventh, or even ninth month. If we can save the child too, so much the better. As is the case in placenta previa, the development of the placenta increases the chances of hemorrhage and, of course, the greater surface to bleed, the more the danger from the hemorrhage.

Early interference in all cases as soon as discovered, is the proper work with rapid operations with a minimum of anesthesia, careful work with exact methods, I do not hold that this is the surgeon's only hope or his only means of meeting these troubles, and, therefore, if the use of the knife is denied him, that all hope and all other sources of help are nil. Diseased ovaries and tubes, with displacement of uterus, prolapsed and adherent

ovaries, are conditions oftenest met with by the gynecologist. They are common to every community, and they occur in so many forms and conditions, with varying severity, that it is hard to classify them, being a large portion of womankind, and to a surgeon they present features and conditions that demand careful and conscientious investigation. A woman with an adherent, prolapsed ovary is often more crippled than if she had lost her leg.

Lusk has reported recently thirteen cases where celiotomy had been performed with the fetus living in the second half of ectopic pregnancy, viz.: Those of Briesky, Brown, Eastman, Jessup, Rein, Lazarewitsch, Lusk, Martin, Olshausen, Shauta, Taylor, Treub, and John Williams. A study of these cases and their careful analysis by Lusk shows that we are getting beyond the realm of chance dealing with the placenta and are successfully attacking its intrenchments in the rear by enucleation and ligation of its vessels beyond the placenta, the general ooze from the united small vessels and torn surfaces being compressed by packing with iodoform gauze after the separation and delivery of afterbirth. In his own case Lusk saved his patient by vigorously compressing the abdominal aorta while compeling the placenta separation, and a final packing of gauze in a Mikulicz pouch, while Jessup and Taylor left the placenta untouched with cord hanging out the lower angle of the closed abdominal incisions. In Jessup's case the putrescent placenta was two months and a half in discharging itself and curing the patient. In Taylor's the abdomen had to be reopened on the twelfth day, on account of the gangrenous condition of the cord and symptoms of septicemia. The hemorrhage following the separation of the afterbirth "was quite well." Lusk says: "Both these cases belong to the domain of miracle and do not invite imitation." Olshausen, by tying the vessels in the broad ligament beneath the placenta was able to remove it completely without hemorrhage. Fernwald found the placenta attached, not only in the folds of the broad ligaments, but to the underside of the uterus. He tied the vessels in the ligament and clamped and removed the portion of the uterus which bled. A few stitches and some iodoform gauze saved the day.

Martin tied the vessels beneath the placenta and by the side of the uterus, in the seventh month of ectopic pregnancy, and removed this organ without loss of blood. He closed the sac above and drained through an opening below, punched through the cul de sac into the vagina. Briesky and Eastman both operated successfully in the eighth month, removing the entire ovum. They ligated the vessels under the placenta. Eastman "was able to clamp the uterine end of the tube and the broad ligament and to cut away the portion which contained the ovum." In February, 1890, Prof. Rein of Kiew successfully enucleated from the peritoneum an eight months' fetus with placenta and membranes in the same manner as an intra-ligamentous ovarian tumor is enucleated. As in ovariotomy, hysterectomy and appendicitis, this operation is undergoing various stages of evolution, resulting finally in the saving of more than a dozen women and some of the children. Women far advanced in ectopic pregnancy need not be left without a surgical hand outstretched to help them and their worse than unborn children; celiotomy and complete removal of the fetus, placenta and membranes can be done. Many of these operations have been done abroad and yet Eastman and Lusk have added luster to the already bright reputation of American surgery by their brilliant operations in this field.

Here is the report of a typical case of this class of work: The patient was aged 30, white, and the mother of four children. Her menstruation stopped for two months and she had signs of tubal rupture, being seriously ill for several weeks. She recovered and her abdomen began to enlarge for four months. She had some symptoms of pregnancy, but no one thought, in the country where she lived, that she really was with child. Seven months from the first missed period she began to fail in health and was treated for malaria and subsequently for typhoid fever, followed by peritonitis.

She was now an invalid, pale and emaciated, with a pulse of 130 and a temperature 99° in the morning, and 104° in the afternoon, with night sweats, frequent chills, no appetite, and unable to walk out of the house; there was a well-defined tumor in her left side which seemed to be undergoing suppuration and to be the cause of all her troubles. It seemed that an operation offered the best chance of recovery, and most extensive adhesions were encountered in all directions. A fluctuating point in the tumor was tapped, and a quart or more of most offensive gray-colored fluid came away. In proceeding with enucleation of the tumor my fingers tore into the sac and a child's foot and leg protruded. The opening was enlarged and a macerating and decomposing eight months' fetus was easily removed with the placenta; being impossible to cleanse the sloughing sac and stitch it to the abdominal wall, for it tore open in several places and putrilage was freely admitted to the abdominal cavity. Much time was spent in separating dense adhesions from the bladder, uterus, and ligament. The abdominal cavity was finally made clean and the wound closed with a glass drainage left in. The patient never rallied, and died on the next day. If a correct diagnosis had been made and the sac incised, the fetus and placenta rapidly removed, and the sac well stitched to the peritonium, cleansed and packed with gauze, the patient would have recovered undoubtedly.

NOSE MAKING.

The nose is the most prominent feature in the human face, and is the one that man sets most store by, being characteristic (as he fondly imagines) of his greatness among his fellow animals and not shared by those below him in the scale of existence, says the *Medical Times and Hospital Gazette*. Consequent upon the estimation in which man holds his nose as a hall-mark of his grandeur, so does he lament when any accident befalls that prominent feature. The deformities which may afflict it have long exercised human ingenuity for a remedy, and many methods have been invented.

The most recent and most practical suggestion in proboscine orthopedics is that of the subcutaneous injection of melted paraffin wax. In cases of saddle-nose and the like this has met with considerable success, and there are already quite a goodly number of persons walking about London whose noses are chiefly composed of shiny skin and paraffin. As is the fate of many cosmetic operations, the lay papers have at last become cognizant of this surgical departure, and are dilating with hysterical eloquence upon the subject, much to the chagrin of the surgeons whose cases they quote. There is, however, a side to the question which has not yet been ventilated. How long does the improvement last? As far as can be gathered in the short period during which the paraffin injection system has been in vogue, it only lasts about a year. At the end of that time the wax has become absorbed and the nose is as unsightly as ever. It is to be feared, therefore, that many people who have at last acquired noses of patrician aquilinity and genial

shininess will be grievously disappointed as the organs become small by degrees and beautifully less. Even the Taliacotian nose described with such jocular minuteness in "Hudibras" lasted as long as the part from which it had been derived.

THE VALUE OF THE ROENTGEN RAYS IN CANCER.

Dr. A. R. Robinson, Professor of Dermatology in the New York Polyclinic, has had in that institution a very large experience in the treatment of cancer with the X-rays. He says, in summing up his conclusions that the Roentgen rays is a very valuable addition to our amamentarium in the treatment of cancer. Especially in cases of advanced epithelioma regarded as inoperable, but the majority of cases reported cured could have been cured much quicker by the knife or caustics, especially by the latter. According to our present knowledge, Dr. Robinson says the X-ray treatment is not curative in internal cancer of any part of the body—mouth, larynx, stomach, uterus, etc.

PREHISTORIC MEDICINE.

There is no doubt that the doctor was an institution in Assyria and Babylonia. It is true that the great bulk of the people had recourse to religious charms and ceremonies when they were ill, and ascribed their sickness to possession by demons instead of to natural causes. There were, however, constantly increasing numbers of the educated who looked for aid in their maladies rather to the physician with his medicines than to the sorcerer or priest with his charms. The British Museum contains fragments of an edition, made for the library of Nineveh, of an old and renowned Babylonian treatise on medicine. In this work an attempt is made to classify and describe diseases, and to enumerate the various remedies that had been proposed for them. Some of the prescriptions are of inordinate length, containing a mixture of the most heterogeneous drugs. At other times the patient was given his choice of the remedies he might adopt. Thus, for an attack of spleen, he was told that he might "slice the seed of a reed and dates in palm wine, or mix calves' milk and bitters in palm wine, or drink garlic and bitters in palm wine;" or finally try several other recipes which are severally named. For an aching tooth, we are told, "the root of the plant of human destiny (perhaps the mandrake) is the medicine; it must be placed upon the tooth. The fruit of the yellow snake-wort is the medicine for an aching tooth; it must be placed upon the tooth. The roots of a thorn which does not see the face of the sun when growing is the medicine for an aching tooth; it must be placed upon the tooth." In the midst of all these prescriptions, however, room was still found for some of the old superstitious charms and incantations which might be tried when everything else had failed. The practice of medicine had advanced to a much higher point in Egypt, but it is probable that it was from Babylonia rather than from Egypt that the Jews acquired their knowledge of it.

LONGEVITY.

The last United States census gives interesting statistics of the extreme longevity reached by some of its citizens. There is one person, a negress of Georgia, over 150 years old. There are 33,762 persons over 90. There are 9 over 130, and 86 over 120; of the latter number 28 are males and 58 females. All who are upward of 115 are negroes, with the exception of one Indian, who is 130. Next to the negro the Irish race holds the record for old age. A Russian, who is 136, is believed to be the oldest white man living.

VACCINATION ANTAGONIZING WHOOPING-COUGH.

Dr. Dietrich, of Algeria, and also several leading Italian physicians, after extended observations with results enumerated, have reached the conclusion that vaccination not only has a marked curative effect on whooping-cough, but also confers a degree of immunity against that disease.

THE HEAD LOUSE.

A writer in the *Eclectic* finds in chloroform water applied directly to the parts or in the form of vapor, a very efficient insecticide, much safer and more effective than any other insecticide, and acting instantaneously upon the insect.

REASONS WHY HE CAME TO THE ASYLUM.

The new patient explained his family relations as follows: "I met a young widow with a grown step-daughter, and the widow married me. Then my father who was a widower, met my step-daughter and married her. That made my wife the mother-in-law of her father-in-law and made my step-daughter my mother, and my father my step-son. Then my step-mother, the step-daughter of my wife had a son. That boy was, of course, my brother, because he was my father's son. He was also the son of my wife's step-daughter, and therefore her grandson. That made me grandfather to my step-brother. Then my wife had a son. My mother-in-law, the step-sister of my son, is also his grandmother because he is my step-son's child. My father is the brother-in-law of my child because his step-sister is his wife. I am the brother of my own son who is also the child of my step-grandmother. I am my brother's brother-in-law, my wife is her own child's aunt, my son is her own grandfather. And after trying to explain the relationship in our family some seven times a dav to our calling friends for a fortnight, I was brought here—no, came here of my own free will."—*Med. Dial.*

Several London hospital surgeons are now using the telephone whenever they have occasion to probe for bullets or other metallic objects embedded in the human body. The receiver of the telephone is placed on the head of the operator, the patient in the usual position in contact with a plate. The general medium employed being a wet sponge or some paper saturated with a saline solution spread over the plate. The latter is connected with the telephone by wire, and the probe, after it has been introduced into the body, vibrates as soon as the foreign metallic substance comes in contact with it. The probe is also connected with the telephone by wire, and thus no such blunder is possible as sometimes happens when an ordinary battery is used. When a telephone is used in this way the plate acts as one pole and the probe as the other. Needles, bullets, grains of shot, and pieces of steel and copper have been easily located by means of this simple method. The only instances where the telephone does not act satisfactorily are when the objects to be located are of the same metal as the probe.

Timothy Field Allen, M.D., LL.D., died in this city December 6th, in the sixty-fifth year of his age, from apoplexy. Dr. Allen was for many years Professor of Materia Medica in the New York Homeopathic Medical College and Hospital, and for a time Dean of the Faculty.

MISCELLANY.

—Montana has a state board of osteopaths.

—Women students are not allowed to matriculate at the University of Goettingen.

—Sweden's last census records the lowest death rate yet attained by a civilized nation. During the last 10 years it only averaged 16.49 per 1000.

—An association has been formed in Tokio for the purpose of founding hospitals in China, this being considered the best means of securing Chinese sympathy with occidental science.

—It is said that in some localities in Southern California no man can live for 10 hours without drink, the dryness of the atmosphere causing the liquids of the body to evaporate so quickly.

—The McKinley Hospital, of Trenton, N. J., formerly strictly homeopathic, now allows any physician to treat his patients there. A number have availed themselves of this opportunity and the hospital bids fair to become popular.

—Mrs. Jane Boyes, M.D., a graduate of Edinburgh University, has just been appointed government physician for the Island of Coll (Argyleshire). She is said to be the first woman doctor in Scotland to receive a government appointment.

—The disinfection of paper currency, which was stopped for a while, is again being unlertaken by the various banks of Philadelphia. The bills are washed and thoroughly disinfected with formaldehyde before being handed out for circulation.

—The diet for the 23,000 insane persons in the 11 new York State hospitals is to be increased and improved at an annual expense of $50,000. Other improvements, in administration and inspection, will more than balance this and lower the per capita cost.

—Mme. Rosalion-Sochalskaia, who died recently at Poltawa, Russia, began the study of medicine at the age of 54, at the same time that her daughter entered medical college. She had done much literary work before, and continued it while practising medicine.

—The most inexpensive prophylactic treatment known is the treatment sold by the friars in the Philippines, consisting of a picture of a cross and a prayer. It is guaranteed to prevent cholera, and sells for 2½ cents in Mexican money, or a trifle over a cent "gold."

—A. Brunet (quoted in *Pediatrics*) claims that erosion of the first lower molar in a patient whose other teeth are healthy, is a valuable pathognomonic sign of hereditary syphilis. The first molar of the second dentition is the only tooth the ossification of which begins in utero.

—For itching from any cause hot water is one of the best and quickest means of relief, says Edmund Andrews in the *Journal of the A. M. A.* Dr. Andrews has devised a tube with return flow for the treatment of pruritus ani which gives excellent results when hot baths fail.

—H. W. Smith (*Alk. Clin.*, May, 1902) says he believes that an orange taken just before meals reduces the tendency of some gouty individuals to overeat, and that it is an important part of his treatment in such cases. He asks if this is just a notion of his, or if there is something in it.

—From the point of view of longevity (*Merck's Archives*), the abstainer is not simply the one who does not at the present time use alcoholic drinks, but rather the one who has never used them. The reformed drunkard may be a total abstainer but he cannot on that account be considered a good risk.

—It is stated by an authority that the weight of a man's brain has nothing to do with his mental power. It is a question of climate, not of intellect. The colder the climate, the greater the size of the brain. The largest heads are those of the Chugatshes, who live very far north, and next come the heads of the Lapps.

—The Chinese port of Amoy has the unenviable reputation of being the most unhealthy place in the world. Built some 10 centuries ago over a cemetery in which, according to a modest calculation, 5,000,000 bodies were interred, its drinking water is derived from wells. Plague and typhus are epidemic, and the mortality reaches frightful proportions.

—Peter Green, a former street inspector of Chicago, has invented what he claims to be a dustless street-sweeper. It is run by a gasoline engine, which operates a system of fans and suction-tubes by which the dust is gathered into proper receptacles. If his claim is substantiated, the name of Peter Green should be placed upon the list of public benefactors.

—According to Herr G. Kaiser, bacilli of pulmonary consumption are killed in 30 minutes by the light of an arc lamp concentrated by a lens of blue glass or methylene blue. These pure blue rays pass through the body, as proved by photography, and therefore can destroy bacilli in any part of the lungs. Patients treated showed marked improvement after six days.

—The *Lancet* announces the outbreak of a peculiar disease among windows of York Minster. Some of the thirteenth and fourteenth century glass seems to be perforated to such an extent that portions of it yield on the slightest touch, and much of its transparent quality has disappeared. The malady is ascribed to some unknown fungus which has established an injurious chemical action.

—A bill will be presented at the next Legislature to abolish the office of Coroner in the city of New York. The Coroner's present duties will be divided between the President of the Board of Health and magistrates. The pathological phase of every death seen fit for investigation will devolve upon the President of the Board of Health, or such officers as he may choose, and the magisterial aspect upon judges or magistrates.

—An Austrian material for preventing the rising of dust on sweeping proves to be cottonseed oil. In a test at Vienna it was found that floors oiled twice a year could be swept weekly without any whirling of the dust, and the material was recommended for all rooms receiving many persons, as well as for laboratories, libraries, and other places to be kept scrupouslydust-free.

—The Japanese have no ear lobes. This is a discovery which has apparently been made for the first time by Dr. Von Der Hayden, director of the public hospital in Yokohama. The absence of ear lobes, he claims, is in some respects the most marked distinction between Japanese and Europeans, and he maintains that the probable reason why the latter have lobes is because their ancestors for many generations wore very heavy earrings.

—It is well to bear in mind in the early stages of syphilis or supposed syphilis, that the accurate diagnosis may be entirely veiled by the immediate administration of mercurials. It is true that the secondary symptoms may be prevented and the patient saved the annoyance of the eruptive stage, but in so doing the diagnosis remains very uncertain. The diagnosis of syphilis on the initial lesion alone is practically impossible.

ORIGINAL ARTICLES.

A CLINICAL STUDY OF INSANITY AND NERVOUS CASES

BY WM. MAGAZINER, M.D.

INSANITY is said by Tuke to be "morbid conditions of the brain, the results of defective formation or altered nutrition of its substance, induced by local or general morbid processes and characterized especially by non-development, obliteration, impairment, or perversion or one or more of its psychical functions."

The following classification of insanity has been adopted by many writers:

A. MENTAL DISEASES OF THE FULLY-DEVELOPED BRAIN.

I. *Diseases without Pathological Anatomical Lesions, i.e., Functional Mental Disease.*

AA. *Psycho-neurosis—i.e.,* Diseased States of the Normally-developed and Healthy Brain.

1. Melancholia. (Inhibition neurosis.) (a) Melancholia simplex; (b) melancholia cum stupore.

2. Mania. (Neurosis with loss of normal inhibition.) (a) Maniacal exaltation; (b) acute mania, (Tobsucht).

3. Stuporous insanity. (Acute and curable, or primary dementia; exhaustion neurosis.)

4. Confusional insanity. (Psycho-neurosis with hallucinations.)

Terminations of the above Functional Diseases, when not cured: Chronic insanity, incurable; secondary dementia, (a) with agitation, (b) with apathy.

BB. *Psychical Degenerations—i.e.,* Diseased states of the Abnormally-developed Brain, Congenital or Acquired.

1. Constitutional affective insanity. (Folie raisonnante.)

2. Paranoia. (Monomania.) (a) Primary form; (b) acquired form.

a. Typical form (ideas of persecution and grandeur). b. Paranoia querulens. 7. Paranoia religiosa. 8. Paranoia erotica.

3. Periodical insanity.

4. Insanity following neuroses. (a) Neurasthenic; (b) epileptic; (c) hysterical; (d) hypochondriacal.

II. *Diseases with Constant Pathological Anatomical Lesions (i.e., Brain-diseases with Predominating Mental Disturbance), Organic Mental Disease.*

1. Acute delirium. (Acute diffuse periencephalitis.)

2. Paralytic dementia, or general paresis. (Chronic diffuse periencephalo-meningitis.)

3. Cerebral syphilis.

4. Senile dementia. (Primary cerebral atrophy.)

Appendix—Intoxications. (The connecting group between the first and second divisions.) (a) Chronic alcoholism; (b) morphinism.

B. ARRESTED CEREBRAL DEVELOPMENT WITH MENTAL DEFECT. (IDIOCY; CRETINISM WITH PHYSICAL DEGENERATION.)

(a) With predominating intellectual deficiency—primary imbecility or feeble-mindedness; (b) Predominating ethical deficiency—primary moral imbecility or feeble-mindedness."

With this preliminary statement, I would say that insanity is rare before puberty. When it does so occur, it is in those congenitally affected as in idiocy, epilepsy, chorea. Of late years the influence of toxines in nervous and insane disorders is growing according to recent researches and in this connection I will report some cases of this sort.

Toxine poisoning may act upon the spinal cord or upon the brain. If it acts simply upon the brain, it gives rise to a certain set of symptoms, which are especially noticeable in the case of alcoholics. The picture of alcoholic brain poisoning is one of impairment of mental action, and under this general term is included diminution of thought. Alcohol acts in various ways in producing delirium. A man who has taken alcohol to avoid great difficulties or sorrows in a relatively short period of time may bring about a delirium, which is easily distinguishable from other afebrile deliria. He hears noises, "sees things," has marked mental confusion coupled with excessive action; hallucinations of vision, predominate, and these give rise to the ordinary description of "delirium tremens." It is peculiar to this condition, presenting symptoms that are rather prominent in unequivocal pictures.

The case which I would discuss is a man who has been accustomed to the use of alcohol, not for short periods of time, not in excessive doses for a few weeks or a few months: but he has taken alcohol for many years, having always been a drinker, principally of beer. These persons intend to be honest; yet they always minimize the amount they have taken. Mental hebetude is a characteristic symptom of alcoholism. Yet this man will feel highly insulted if you accuse him of being a drunkard; this is commonly characteristic of these cases. This man has had now for a number of weeks a cerebral symptom which is quite common, namely, he has had some hallucinations. When I ask him what brings him to the clinic, his reply is that he thought he insulted somebody; and when I ask him what makes him think he insulted somebody, his answer is, "I cannot tell; nobody said that to me; it all came by itself." He hears voices day and night for a week; he thinks he hears he is taken away by the police to prison, and if asked why he is to be taken to prison, he says, "because I have insulted some one." He does not see things truthfully. Visual hallucinations generally form an active part of an equivocal picture. In these cases if hallucinations exist at all, they refer to the auditory sense. They appeared about six weeks ago, and if he heard them first, he afterwards had ideas based upon these hallucinations. Now let us analyze the second symptom, which is evidently a false belief based upon hallucinations. Are these illusions expansive or depressive? They are depressive; this is an illusion of persecution, and it is thoroughly systematized. In paranoia we have a long attack of depression followed by a long degree of expansion, and that the beliefs the patient entertains are systematized. These cases are those of alcoholic paranoia. A great deal can be said with regard to the use of such a term as "alcoholic paranoia." But undoubtedly this man differs radically from the typical case of paranoia. We have here a history of considerable data showing itself in the behavior of the insane years ago, gradually commencing with delusions of persecutions running over a long time, having the history of prolonged intoxication. Alcohol may produce mental confusion just as it does delirium; although the confusion may run over weeks and months; may even last as long as ordinary cases of confusional insanity, sometimes lasting a time sufficient to give us hallucinations such as this is, which resembles a true case of paranoia. Why alcohol should have one effect upon one man's brain and another effect upon another man's brain, it is hard to say. There is probably some hereditary defect acting by one or

more channels, to explain why in one case there is paranoia, and in another a case simply of confusion of mind. It is possible that in cases like this, you have, so to speak, a neuropathy; that the ingestion of alcohol developed that inherent weakness and brings it to the surface. These cases differ from typical cases of paranoia, and there is always a history of toxicity, which is sometimes special. There is sometimes coupled with this class of delusion, also delusions of marital infidelity. Upon this fact hinges the notions. This man has not expressed delusions of marital infidelity, nor does he manifest them in any way.

This man has now abstained from the use of alcohol for a period of four weeks. It is perfectly marvelous the degree in which recovery can take place in cases of toxic mental affections, or toxic action upon the nervous system as a whole. The prognosis is favorable in proportion as the hallucinations have not become specialized. Recurrence, if not fed at once, may pass away; but recurrences may be looked for, even long after the alcohol has not been ingested. This man fully believes the excessive use of alcohol is injurious. Note his muscles of expression, the sleepy look, the tremor of the tongue, and also the fact that his enunciation is not clear.

The next case is a young man aged seventeen, who has not been well for about four years. His illness began to manifest itself by nervousness, which showed itself by trembling on slight excitement. He romped and played ball up to this attack, as other boys did; he did not get tired easily; he went to school until about a year ago; stood well in his class, but still he was nervous, and has become more nervous of lae. His occupation is that of a clerk. There was a time when he could do a full day's work. About a year since he could not do a full day's work, and if he were to try now he would soon become tired and nervous; then feels a headache; no backache; trembles and feels weak sometimes. He is now worrying about his work, which is very troublesome to him. On making an entry in the book there is something wrong with it; he goes over it to satisfy himself; goes over it two, three or as many times as nine or more; sometimes cannot leave it for long while; keeps going over it from time to time. Finally he becomes exhausted so that he cannot go on with his work at all; then he stops and cries. When he has signed his name, he is not sure it is signed right, and goes over it a great many times before he is sure of its being right. As to his bedroom, he forgets whether he turned out the gas, and will examine the fixture as many as eight times. On dressing himself in the morning, he cannot do it quickly; he does not stop to see if his shoes are tied right. On feeling his hands, I find they are not warm. They do not react to touch, and they are somewhat livid. There is vasomotor weakness here; they are moist, cold, damp, and livid, showing that the peripheral circulation is feeble.

In neurasthenia you always have the symptoms of dates, symptoms that are chronic in character. Our patient has symptoms of weakness which are referable to all of his functions, the sense of tiredness, backaches, headaches, an incapability for constant work, at one time mental, at another physical. This boy is a neurasthenic. I think there is no doubt that he is more than a neurasthenic. From the symptoms he gives, he is also a neuropathic. By a neurasthenic person, I mean one who is physically and mentally well. A man that is not very tired has no difficulty about coming to a decision regarding the ordinary acts of his daily life; he does not pause about putting on his shoes or putting out the gas; but let him become tired; and it may be regarded at first as an unusual thing. The ordinary neurasthenic who is not also neuropathic, but tired from overwork, may become hesitating regarding the business affairs, but if he has the misfortune to be also neuropathic he may have indecision developed to a large degree, so as to interfere with the ordinary acts of life. In this boy we have developed what is known as the "insanity of indecision." This boy performs some relatively simple act; he makes an ordinary entry in his books such as an ordinary man notes down and takes no thought as to whether they are correct or not. The ordinary man can write his own name without going over and over it in order to see if it is right. But this boy is arrested by it until he breaks down with a weakened pseudo attack. Sometimes he must appeal to others to see if it is right or not; he cannot believe it is right until some one tells him. "Insanity of indecision" is properly neurasthenic; but it is also neuropathic, because it takes the elements of both. A man may be more or less brave but he does not form such a physiological association as this man forms in his mind. He hesitates, and when he goes to bed, a horrible haunting fear warns him that perhaps he has not turned out the gas; perhaps he relights it, and turns it out again; and so on until it perhaps robs him of his sleep. His indecision is not so marked however about his sleep, as about his work.

Now as to the prognosis. Ordinary neurasthenia, the so-called neuropathic-neurasthenia, offers a favorable prognosis, and when it is from overwork and overstrain, the prospect of recovery is good, provided it is arrested. Provided also that that neurasthenia has not persisted over too many years or too many months. These pathological associations of sessions, as we used to call them, but we call them obsessions now, means that the recovery is doubtful.

Such a boy as this should lead a purely physiological life, not at task work or desk work; he should live in the open air; at manual labor; he should work in the fields. If he had the facilities he might go out and live on a ranch, where he would be constantly in the open air, getting lots of good food, and good sleep. These pathological associations or obsessions manifest themselves in other ways, as in special forms of fear, or he has secondary marked defects of the will, as when he cannot perform certain simple acts, as walking up stairs, etc.

The next case is that of a man who was brought in from the Out-patients' Department, suffering from what appears to be a case of pronounced sciatica.

Now as to the methods of treatment of sciatica; also the result. If a part is painful, nature insists upon that part being kept still. The part is kept quiet, and if it be at all feasible, place your case of sciatica in bed. Rest is followed by marked improvement in regard to the pain. If in bed, better make the limbs absolutely immobile, by the application of splints. You may use the posterior splint, which should be well padded, and this is really of more value than simply the splint, as it will enable you to keep the patient perfectly still. Use the pan when the bowels or bladder are to be emptied. The pain may last for six or seven hours. In some cases the suffering is terrible day and night. But on the second night he experienced a good deal of relief, by the use of the splint, and this is kept up until he has no pain at all. This patient had sciatica about six weeks before admission, and in two weeks he has had no pain, especially as long as he keeps quiet. We will keep him resting a little while longer.

While you are resting your patient in bed you can use remedies which are more effectual in combination with rest. The salicylate of sodium in 15 to 20 grain doses, three or four times daily. We may diminish the sodium to about one-half. I also associate with it the bromide of sodium in 20 grain doses, giving it well diluted. If circumstances permit, of course, put your patient to bed. But your patient may say that his finances will not permit it; they would go to bed however if they have a broken leg or a broken thigh. Now and then you will have a case in which the salicylates will not agree with the stomach, and in that case I give either salophen or aspirin with the iodides in small doses later on. You may give tonics, as strychia, iron, or perhaps small doses of arsenic. After a while the leg should be rubbed gently, and massaged.

Another typical case has been reported by a prominent neuropathologist as follows: "Lord O'Haughey," as he called himself, is thirty years of age, of temperate habits. Asked his occupation, he replies that he receives government money, and that he is still in the service of the queen. He makes also the statement that he is spiritually married to the Virgin Mary. He arrived at the knowledge of his positions and offices from reading early Irish history; in regard to the apparitions which he claims to have seen, as whether he may not have been deceived by dreams, he answers that they were distinct apparitions, as plain as "man to man." He first began to have these experiences on September 19, 1887, the blessed Virgin first visited him. He lays claim to the title M.D., as well as others. He attended medical lectures in Dublin, where he took up the subject in connection with his study of apparitions, regarding it as very important. "Lord O'Haughey" is also a poet and statistician. He has done a great deal of work referring to the population of countries, the question of wages, and the respective wealth of countries, with special reference to the rent-roll in England. He has written almost a tome during the six or seven weeks he has been at the island, including also facts in relation to himself. He has written some ineresting poetry. Perhaps he will repeat a poem to us. No; he tells us that the true poet cannot remember his poetry five minutes after it has occurred to him. He has endless facility in the matter of rhyme. The subject is unimportant: "Lord O'Haughey" is able to write a poem upon the wreck of a vessel or the condition of Ireland. He does not take long to do it either. Here is a verse from one of his poems:

"O Spain, of royal fame,
What occurred on the main;
Or has the serpent and all his fangs
Left the ocean, on thy land he sprang;
Or is thy monarch in his bibs so short
Thy shores invaded for war or extort."

Here is a short part of one of many letters in which he describes his rank and position.

"To the O'Haughey, Senior,—

"I, as Hereditary Prince of Delaradda, etc., etc., advise you to inform Queen Victoria that unless she gives over £36,000 to maintain the Royal sway of The O'Haughey House, that has its origin since the days of St. Patrick, etc., etc. I will not be responsible for the integrity of Canada. I am younger than the Duke of Fife. I am the picture of Jesus Christ on earth, and God's representative also. As Prince Imperial by Pope Leo XIII. and the Empress, I will deign to acknowledge my titles. I am a poet of the brightest water to Queen Victoria."

This is a good example of chronic mania, commencing either with depression or exaltation. There is usually mental weakness in some direction, although they may make themselves generally useful around a ward. There is an increased idea of self-importance showing itself in delusions, chiefly of personality, so that such patients consider themselves, as in this case, as God, or some member of a royal family. In chronic mania, the succession of ideas is rapid but fleeting, leaving no fixed impression. Emotional states of anger and pleasure alternate without cause for either. This class of patients contains the great letter-writers of our asylums. This patient has written pages describing and maintaining his position, addressed to Queen Victoria or to the United States government. The contradictory character of his statements does not trouble him in the least. Such patients may be classed as incurable, and owing to outbursts of violence at times, usually homicidal and destructive, require constant care. He has learned to accommodate himself to his surroundings, recognizing the condition of his surroundings, as many of the insane do. Many are brought to hospitals violent, and some of the other patients talk to them, tell them they will get along better if they keep quiet, and they recognize this, and become pleasant and agreeable.

POINTS IN HEART DISEASE.

BY M. SHELLENBERG, M.D.

DEMME used strophanthus in seven cases of uncomplicated mitral disease, in five cases of scarlatinal nephritis, in three of exudative pleuritis, and in two each of bronchial asthma, pulmonary tuberculosis, and whooping cough in children between the age of five and fifteen years. He found that dyspepsia was produced in the younger children, so that the treatment could not be continued in their cases. The initial dose for children from five to ten years of age was one drop, three times daily; for older children, one drop, four times daily. After four to seven days the dose was increased to three drops four or five times daily. Nausea and cold-sweating indicated a suspension of the treatment and the administration of wine, cognac, or coffee. In heart-failure diuresis was increased after three or four days, the pulse becoming slower and stronger and the breathing easier. The dropsical phenomena became less marked. The diuretic effect ceased after three or four days in five of the cases of mitral disease, and compensation could be effected only by the combined action of strophanthus with digitalis. A prompt diuretic effect was produced by strophanthus in two of the cases of chronic scarlatinal nephritis, while in the acute cases no benefit was experienced. The effect in exudative pleuritis was satisfactory, and also in the two cases of bronchial asthma, in which strophanthus was given in connection with iodine of potassium. In pulmonary phthisis no positive result was observed, but in the two cases of whooping cough, in which there was persistent dyspnea and edema of the lower extremities in consequence of dilatation of the heart, the results were satisfactory. The action of strophanthus consists in elevation of the blood-pressure and favorable influence upon the respiratory center. It can complete the action of digitalis when both drugs are given, and neither cumulative effect nor diminished activity were observed in cases in which it was used during a long period.

Riegel in a most elaborate and instructive article upon

retardation of the pulse, states that he believes that the title "tardation of the pulse" is not quite accurate, for cases frequently occur in which the pulse does not indicate as many contractions of the heart as palpation or auscultation shows actually takes place. The heart-beats may sometimes be double or even treble the number of pulse-waves. Cases have frequently been reported as instances of brachycardia in which this condition was present. Pulsus begeminus, in which the second beat is excessively weak, has been mistaken for retardation of the pulse.

Riegel excludes such cases from the category of brachycardia, and claims that it is not the number of pulse-waves but that of heart contractions which must be the standard. The normal number of heart-beats per minute has been variously stated. He agrees with the majority of writers in considering a pulse of 60 or under as indicating brachycardia, and excludes from consideration all cases over that, in which the heart's action does not correspond with that of the pulse. He has examined in the last seven years 4,484 men and 3,083 women making a total of 7,567 and found 710 men and 331 women or a total of 1,041 instances of brachycardia. The preponderance of males he considers of no import. He divides brachycardia into: (1) That occurring under physiological conditions; (2) That occurring under pathological conditions, although it is often difficult to determine to which class a case is to be assigned. In physiological brachycardia comes first puerperal brachycardia. It is not uncommon to see the pulse beating from 44 to 60 per minute in the healthy puerperal state, and it has been reduced even as low as 34. The duration of the retardation is from some hours to 10 or 12 days, or even longer; the character of the labor exerting no influence. After premature labor it is found as well as that at term; the presence of the slightest pathological condition during the puerperium hinders its development. The most varying explanations have been given of its cause. The principal of these are increase of the arterial tension and of the blood pressure, absorption of the fat of the degenerative uterus, disturbances of innervation, mental and bodily rest, diminution of the work thrown on the heart by the removal of the demands made by the fetus, increase of the vital capacity of the lungs. Brachycardia occurs from hunger, as has been shown by the experience of Lissauer on fasting Hebrews where the frequency of the pulse is less on fast days, though showing variations. In brachycardia depending on individual peculiarities, Grob describes six cases out of 3,578 individuals observed. Riegel entertains a doubt about some of them, and emphasizes the importance of determining that the slowness of the pulse is more or less constant, and not due to the presence of some pathological condition. He cites a few other cases from medical literature but believes that many of them cannot properly be included in this category, and holds that the retardation of pulse from this cause is rare.

Coming to pathological brachycardia, from studying all authors 1,041 cases are included in three groups with which he combines the "idiopathic" and "symptomatic" forms of Grob. In brachycardia in the convalescence from acute diseases, 282 cases were observed, occurring in pneumonia; recurrent typhoid, and intermittent fever, articular rheumatism; febricula and influenza; diphtheria, scarlatina, morbilli; variola, varicella, and erysipelas. The condition followed in about one-seventh of the total number of cases of fever. It is especially apt to occur in the fall of temperature if antipyretics or digitalis have been employed. He quotes extensively the opinions of different writers and recorded instances of slowing of pulse after fevers. It is especially apt to occur in young and strong individuals, and in cases which have run an uncomplicated course. The retardation may acompany the crisis, or occur more gradually and increasingly. It lasts a very variable time; the general conditions do not seem to be affected by it as a rule, though cases have been reported in which severe symptoms attended its development. Of the proposed explanations of its cause, the most rational is that of Traube, that it is an evidence of exhaustion; the resistance which the heart offers to nervous impulses being increased through exhaustion, and consequently the organ responding only slowly after removal of the influence of the fever.

Studying the brachycardia in diseases of the organs, the largest number of cases observed by Riegel were of this class, viz., 379, divided among very various affections; those in which it occurred oftenest being ulcus and carcinoma ventriculi; simple gastrectasia, gastric catarrh, chronic dyspepsia, catarrhal icterus and diseases of the liver, and diseases of the oral cavity and throat. The degree of retardation noticed was often great, the pulse beating 40 to 45, and in one case of dyspepsia 34. The brachycardia usually disappears with the disease, but not universally with the acute symptoms.

The cause of the retardation is easily explainable in many cases on the theory of reflex inhibitory influence through the vagus, in others it is not clear. Icterus was the cause in a number of cases; that icterus produces this result has long been known, and is now generally admitted to be due to the influence of the bile acids upon the cardiac ganglia. Brachycardia in diseases of the respiratory organs includes 87 cases which do not include pneumonia, referred to the first group. Little is to be found in medical literature on the subject. The greater number of cases of this class seen by Riegel occurred in emphysema. In this disease the cause was probably the increased pressure on the vagi in the overfilled lungs, as well as the action of blood containing an abnormal amount of carbonic dioxide. In other conditions the cause was often not easily discoverable; though in some the retardation might properly have been referred as "convalescence-brachycardia."

Only a small number of brachycardia in diseases of the circulation were seen, and the ratio to the total number of circulatory diseases observed was also small. All cases of irregularity of the heart, etc., and of the retarding action of drugs, were excluded. The condition was relatively most common in diseases of the myocardium, especially fatty degeneration. Riegel reviews carefully many of the expressed views and reported cases of other writers, illustrating brachycardia in fatty degeneration of the heart, sclerosis and thrombosis of the coronary arteries, aortic stenosis, diseases of the aorta, cardiac over-strain, angina pectoris, mitral stenosis, diseases of the pericardium, and congenital heart-lesions. He concludes from these, with a study of his own cases, that although brachycardia is quite frequently seen in fatty degeneration and in sclerosis of the coronary arteries, as well as in certain valvular lesions, it is in no sense a constant and pathognomic symptom of any certain diseases of the heart. It is of rare occurrence in heart disease. Its cause is doubtless different in different cases, but it only occurs in a weak and insufficiently nourished heart, whatever the actual circulatory disease may be. Thus a certain process may, or may not, produce brachycardia, according as the heart is or is not weak. A true neurasthenia of the heart has also been described as a cause of brachycardia. Riegel

has observed 64 instances of brachycardia in diseases of the urinary organs, divided among cystitis and acute, chronic, and non-scarlatinal nephritis. He has for years observed its occurrence in nephritis, and considers it to be always associated with diminished excretion of urine and an increase in arterial tension. This and the retardation are due undoubtedly to uremia. Consequently brachycardia is much more common in acute than in chronic nephritis. In diseases of the bladder it is probably produced by some reflex action, as by an irritation of the sensory nerves.

In brachycardia resulting from intoxications, Riegel has observed three cases resulting from poisoning by lead and five from that by alcohol. Instances of both these conditions have been reported by others, and are quoted by him. The brachycardia after digitalis and similar drugs is to be classed here, as is that from the use of strong coffee or tobacco. Brachycardia in diseases of the blood, and in general disturbances of nutrition was observed in 31 cases. It has been described in diabetes, though it is uncertain how far the disease was etiologically connected with the retardation. Diabetes insipidus and brachycardia may be associated, both being due presumably to irritation of the vagus. Anemia and chlorosis too frequently are accompanied by brachycardia to allow of the supposition that the association is merely accidental.

Riegel has observed 93 cases of brachycardia in diseases of the nervous system. Its occurrence in diseases of the brain has long been known, as in concussion, apoplexy, meningitis, second stage of epilepsy; cerebral tumors, cerebral anemia anything causing an irritation of the vagus centre, etc. As regards disease of the spinal cord, it has long been understood that injuries of the cervical cord, as in fracture of the vertebræ, may produce retardation of the pulse. The association of retardationof the pulse with epilepsy or other spasm has also been noted. In certain psychoses brachycardia has been observed, as in mania, melancholia, general paresis. It has been seen in mental repression. Numerous cases are reported and here referred to in which brachycardia was the result of direct irritation of the vagus, abscess, or pressure. Riegel has observed 17 instances of pulse-retardation in exhaustion, 1 in sunstroke, 12 in diseases of the skin, 17 in painful affections of the muscles, and others in diseases of the sexual system.

Riegel finds that brachycardia is much the most frequent in convalescence from acute fevers; then in diseases of the digestive system, and then in those of the circulatory, respiratory, and nervous system. The cause and indication are very different in different cases. After acute fever it is, to a certain extent, a normal occurrence, and in the puerperium is purely physiological, while in diseases of the heart and brain it is an ominous symptom. As to its etiology, it is sometimes a reflex phenomenon from different peripheral paths, sometimes a direct cerebral focal symptom. Its cause is sometimes a diminished excitability or a paralysis of the cardiac ganglia, the accelerator nerves, or vasomotor system; sometimes an irritation of the vagus; sometimes a weakness or degeneration of the heart muscle; sometimes direct disorder of the coronary arteries.

There is a rather wide-spread notion that when a physician has decided that a patient has valvular heart disease, there is very little to do; that it is a condition of things beyond the reach of remedies. A more unfortunate mistake was never made for it is entirely erroneous, for while it is true that valvular heart disease is very intractable and often absolutely resists the influence of treatment so far as we can see, we can usually effect a great deal by the management of such cases. But if we would manage them properly, we must have definite knowledge of the nature of the lesion. Let us take a man, aged thirty-two years, naturally strong and fairly healthy, with no history of rheumatism or scarlet fever. The patient has been attending to his business. He is a man who has been accustomed to drinking moderately, but not excessively. He denies syphilis, and dates back his present trouble about two and a half years. At present he has a dry hacking cough and pains about the heart, gradually getting worse. About six months ago he was taken with shortness of breath, which has gradually increased to date; he spits up some mucus in the morning. He cannot sleep well at night on account of this pain. I am at once struck by the forcible pulsations that can be observed readily at many points where in health they are not present. His apex-beat may be seen quite an inch outside the nipple line, in the fifth intercostal space. It can also be felt in the sixth interspace in the same line. A heaving is perceptible over the whole precordium; a pulse is plainly visible in his subclavicular and supraclavicular spaces; a violent throbbing of the carotids is readily seen, and a keen sight is not needed to detect the heavy beat of the temporal and radial arteries. Such a forcible and far-reaching pulse is quite beyond ordinary experience.

Examining the pulse of a healthy person, you will detect a stroke which does not fall away from your finger at once. You are conscious of a resistance, which I may tell you is due to the recoil of the distended artery upon the blood which is being forced by the compression in the only direction in which it can escape, towards the peripheral circulation. Here this element of the pulse is lacking. One feels, it is true, a remarkably forcible stroke, which exhausts itself, however, at the instant. It is gone at once. This pulse has been compared to the stroke of a water-hammer or to the passage of beads or shot under the finger. The so-called "Corrigan's pulse," while characteristic of aortic insufficiency, it may be simulated by conditions of extremely low arterial tension with strong heart-action.

Over the base of the heart, a loud and prolonged murmur is heard with both systole and diastole. One is reasonably safe in referring a purely diastolic murmur to aortic regurgitation,—insufficiency of the pulmonary valves, which otherwise exhibits a murmur quite similar, being practically, not encountered in valvular disease acquired extra utero, while narrowing of the auriculo-ventricular orifices, which from analogy might be expected to produce diastolic murmur, rarely does so, unless in connection with the presystolic murmur characteristic of that lesion. The presystolic murmur and the diastolic murmur of auriculo-ventricular stenosis are heard over an area nearly restricted to the immediate vicinity of the apex; while, in our present case, the murmurs are heard with great and equal intensity all over the sternum, and are readily detected all over the upper chest area, both anteriorly and posteriorly. Immediately about the mitral and tricuspid areas they are very faint. In the absence of other perfectly characteristic signs, it would be impossible to locate the point of differential maximum intensity, as it is called, at its usual site,—the head of the third costal cartilage or second intercostal space close to the right sternal border. It should not be forgotten, however, that the murmur of aortic regurgitation is not to be heard at all at the aortic area in some rare cases, but that it is heard as a purely diastolic murmur at the apex,—cases in which the concomitant symptoms leave no shadow of doubt as to the actual lesion. Foster explained this curious and im-

portant phenomenon upon the theory that in these cases it is the posterior cusps of the semilunar valve that are affected. This murmur is usually accepted as indicating stenosis or narrowing of the orifice.

While for each valve and orifice there is ascribed a definite area where the intensity of its sound or murmur is greatest, both actually and as compared with other murmurs and sounds, yet it frequently happens that murmurs, from their intensity and wide distribution, utterly baffle all efforts to locate them solely by consideration of these points of maximum intensity.

In cases where abnormal acceleration of the heart-beat is the chief feature, exclude those cases in which organic disease of the heart is found to precede the signs of morbid acceleration, or in which the rapidity is associated with such conditions as anemia, fever, hemorrhage, the action of certain poisons, and the like, which are generally accepted as causes of acceleration. He also excludes the cases due to peripheral irritation, or in which the acceleration is simply paroxysmal, or the condition may be described as palpitation. The definition of palpitation involves a sensation of discomfort or distress accompanying the rapid cardiac action. In the cases which he describes the heart's action is unduly quickened, often for very protracted periods, but there are none of the painful concomitants of palpitation. The average normal rate of the heart-beat may be taken at 72 per minute in males, and 80 in females, while in the erect position these may be raised to 80 and 90. A rate steadily observed under varying conditions to be over 90 in the adult is morbid. But the influence of age must also be considered; for example, the mean pulse-rate of the infant until the age of twelve months varies from 112 to 130 per minute while the child is awake and in a state of quietude. At six years of age the average rate is 100, and at thirteen years, 88.

The classes of cases in which, in adult life, a long persistent abnormal rapidity of the heart's action has been observed are, for the most part, the following:

1. Grave's disease. In this affection there may be either paroxysmal attacks of accelerated pulsations, or the morbidly rapid action may be persistent. There is no doubt that the disease is often fatal, and that the chief cause of danger lies in the cardiac involvment. In fatal cases the heart is constantly found dilated and hypertrophied, but in no considerable degree, and the myocardium has been found in strictly normal condition.

2. The irritable heart of soldiers. The original observations of DaCosta are well known reporting the persistently quick action of the heart found in numbers of the men engaged in the American Civil War. Not only hypertrophy and dilatation, but even valvular defects may probably result from this condition of irritable heart. As Hirsch has shown, there has been a notable increase of heart disease in communities living in great political and social excitement.

3. Rapid heart in osteo-arthritis. The author's own observations confirm those of Spender, that with the earliest signs of this affection there is a gradual rise of pulse-rate to 110 or even 120, and that this cardiac tumult does not always subside, even when the osteo-arthritic phenomena disappear.

4. Rapid heart without notable morbid association. Cases of this kind have been reported by several observers, in which extreme rapidity of the heart has persisted often for long periods, with little or no subjective sign of distress. This condition of protractedly rapid heart is undoubtedly dangerous and frequently terminates in death. The views of writers are yet at variance as to whether the affection is one of the myocardium, or one of some portion or portions of the nervous system.

Many things must be considered in heart diagnosis, for example from simple auscultation it would be difficult to determine the exact location of the systolic murmur presented by this young woman. She is twenty years of age. She states that her whole train of symptoms dates back no further than last November, when she had her first attack of acute rheumatism. A loud systolic murmur may be heard all over her chest, anteriorly and posteriorly. It may even be heard over her carotid arteries. It is hardly more pronounced over the mitral than over the aortic area. The closure of the tricuspid, pulmonary, and aortic valves may be detected. I am positive that she has no aortic stenosis, because her pulse is full and strong; while her countenance is livid and semi-cyanosed, her left ventricle is distinctly hypertrophied, its apex beating one-half inch inside the nipple line, and with great vigor. She has insufficiency of the mitral valve, diagnosed from the concomitant symptoms rather than from differential murmur intensity.

Another case presents much greater difficulties of diagnosis; it is a man forty-two years of age, who is a bartender, single, and of slender physique. He had rheumatism seven years ago, and again three and a half years ago, by which attack he was confined to bed. He became syphilitic some 10 years ago, and nearly 10 years ago he had a sudden partial paralysis of the whole left side. He had no dyspnea except after exertion. He had a smothering feeling when lying upon his left side, but could lie flat upon the bed with comfort. He had no pain, and never had had dropsy. He never had irregular palpitations, but on walking up a flight of steps felt as if his heart was coming out of his mouth. His apex beat was visible one inch out of his mammary line, while pulsations were visible in the supraclavicular spaces. Radical and temporal pulses were visible; the radial pulse being sharp and fairly full when hanging, but when raised above the head, feeble and compressible. There was marked carotid pulsation but no epigastric pulsation. Over the apex a faint thrill could be felt, apparently presystolic. A loud, rough murmur, diastolic and presystolic, was heard within a space extending from the fifth interspace, one and a half inches inside the mammary line, up to the third rib, and outwardly as far as the posterior axillary line. The murmur gradually faded away towards the tricuspid area, where it gave place to a sharp valvular sound. There was no murmur over the aortic area. The second pulmonary sound was clear, but a faint systolic murmur was heard over this area. There was also faint systolic murmur over the common carotid arteries. The precordium was decidedly bulged. There was no sign of impeded circulation through the lungs or systematic veins.

Though the presystolic character of the apex murmur and thrill could not be denied, I was constrained, in the presence of indubitable evidence of great left ventricular hypertrophy, of the bulging precordium of the violent pulsation of the large systemic arteries, symptoms certainly not to be looked for from the ordinary atrophied left ventricle of mitral stenosis, to claim, at least, that aortic regurgitation was present, and to incline to the opinion that the diastolic murmur the apex was an example of Foster's insufficiency of the posterior cusp of the aortic valve, or, more probably, an instance justifying the late Austin Flint's theory that the presystolic and diastolic apical murmur may reasonably be present in aortic insufficiency where mitral stenosis is altogether absent.

The man passed from observation, but I find him again where it is interesting to observe that while the signs indicating mitral stenosis persist with undiminished intensity, a diastolic basic murmur indicating aortic regurgitation is now plainly distinguishable. The presystolic apical thrill, the characteristic presystolic blubbering murmur, the pulse, all indicate the existence of mitral stenosis, yet all over the upper portion of the chest, anteriorly and posteriorly, even extending into the carotids, the soft, prolonged bruit of aortic insufficiency may be heard. The typical features of presystolic murmur are preserved within a circumscribed space about the mitral area,—a harsh blubbering murmur. Our patient, then, has a combination of mitral stenosis and aortic regurgitation. With such grave lesions of the heart he undoubtedly owes the slow increase of his disabilities to the partial hemiplegia which impedes his locomotion, and protects him from undue strain.

Normally, as the ventricle contracts the cusps of the aortic valve are floated out by the current of blood and offer no obstruction to its passage. The aorta and great vessels are now filled to overflowing. Their elastic coat stretches just as over-distention stretches an elastic rubber tube. Just as the ventricular contraction is spent, the distended aorta contracts upon the volume of blood within it and forces it in the directions of least resistance. These are onward towards the ever-widening capillary circulation and backward towards the cavity whence it came. The reflex current drives together the cusps of the semilunar valve, and thus provides for itself an effective barrier to further backward flow, and the blood can now escape only through the net-work of vessels in front. If now this valve be not properly closed, a portion of this backward-flowing wave of blood escapes into the ventricle, whence it has just come, and the pressure in front is relieved just in proportion to the extent of this leak. Thus during diastole the ventricle receives blood both from the auricle behind and the aorta in front and becomes over-filled. It becomes dilated. At the same time it must discharge an increased volume of blood with each contraction. As it feels this increased strain put upon it, it becomes stronger,—a compensative enlargement occurs. Under ordinary circumstances this compensation keeps pace with the valvular defect. If the lesion be progressive, the ventricle continues to enlarge until it may acquire enormous size.

Hearts in this condition have been known to weigh 40 to 45 ounces, and even more. This hypertrophy is absolutely a preservative process, it is the provision that the heart makes to overcome its difficulties; if it did not occur the circulation could not be carried on; when the heart reaches the limits of its power of enlargement, it begins to tire, its muscular wall weakens and yields, and its cavities increase. Signs of a weakened heart appear, relative insufficiency of the mitral valve develops, and the blood dams up in the lungs and systemic circulation. The elasticity of the vessels, which serves normally during diastole to propel the blood into the distant circulation, is exhausted in the sudden collapse of the vessels upon the volume of blood now escaping both backward and forward. The powerful ventricle sends the blood-wave far beyond its usual limits; often into the capillaries and even into the veins, where the pulse may be observed, as in the small veins of the back of the hand. The capillary pulse may sometimes be shown by the alternate blushing and bleaching of the line of hyperemic reddening caused by scratching the cutaneous surface with the point of a pencil. The sudden collapse of this magnified pulse-wave caused by the leaking valve is the origin of the short sharp, hard, characteristic "water-hammer" or "Corrigan's pulse." Our first two patients, each with enormous cardiac enlargement and with advanced valvular defect, have symptoms which are attributable to defect in front of the mitral valve,—in each this valve is as yet perfect. The left ventricle has difficulty in distributing the blood to the distant parts of the body, but the mitral valve stands sentry and keeps the blood from going back any further, passive engorgement of the pulmonary and systemic circulation occur. A perfect mitral valve enables the sufferer from aortic regurgitation to perform his daily work, often after an almost incredible degree of hypertrophy and insufficiency has developed. It is usually not until dilatation of the ventricle produces relative insufficiency of the mitral valve that we have symptoms of the damming of blood in the venous circulation, with pulmonary edema and all the dangers and distress of passive engorgement.

While this form of valvular disease is compatible with the performance of most of the ordinary duties of life, it is the one in which fatal syncope is most often observed. This does not depend upon the degree of enlargement or of dilatation. There may be under special conditions, in any degree of aortic insufficiency, a sudden over-distention of the ventricle, and the stretched muscle is unable to contract, and all is over in an instant. Fortunately, this result is usually postponed, often for years, and, though ultimately our prognosis must always be unfavorable, our patients are spared many years of active usefulness even when the degree of valvular defect is great.

THE STUDY OF CERTAIN OBSTETRIC CONDITIONS.

BY A. C. GRIGGS, M.D.

THERE are two conditions, resulting from rupture in cases of tubal pregnancy—should the sac rupture into the peritoneum, the placenta continues its development, and pregnancy advances towards term. There is danger to the child and danger to the mother from secondary rupture of the sac, with escape of liquor amnii into the peritoneal cavity. Abdominal section with drainage and packing of the wound should be practised, the remnants of the sac being removed by irrigation. The results at this late stage are unsatisfactory. Again in those cases where extra-peritoneal rupture has occurred, pregnancy has been known to advance to full term. The fetus, however, is apt to die during the early months of gestion, or if it survive it is apt to undergo transformation into adipocere or lithopedion. It should be removed when the diagnosis is clear.

The treatment of abortion has divided the profession into two classes. The expectant form, the teaching of the conservative school, decries instrumental interference while the radical class believe that the uterus is to be emptied of its contents irrespective of symptoms of retention, and the curette plays the most important part; while the modified radical treatment in which the cavity of the uterus is invaded when symptoms of local infection or bleeding determine active interference, the curette or the finger can be used to remove retained decidual material.

Surgery has been the cause of the development of the radical treatment through the light which it has thrown upon pelvic pathology. Cases which have come to abdominal section, either immediately after the abortion or after the development of the later effects, have

shown the danger of neglect. Formerly, as soon as the bleeding has ceased and the local symptoms have disappeared the patient has been dismissed and the later observation of the case neglected. Involution in such a case has possibly been imperfect and improper circulation from the uterine engorgement which is present has reduced the normal power of resistance of the endometrium to pathogenic organisms. As a consequence some placental debris or newly formed thrombus has become infected; this local infection extends either by the lymphatics or by continuity from the endometrium to the mucous membrane of the tube and produces the condition which calls for surgical interference.

As one observer has well said, "The question is whether in every case where a small particle of membrane or a small piece of placenta is left, it is best to go into the uterus with the finger or something else and clear it out; I believe not. It is pretty safe in the majority of cases if no hemorrhage is present and everybody concerned is careful, to leave very small particles rather than subject the woman to another danger of infection by introducing the hand. I remember once taking away some membranes, perhaps 4 or 5 inches in length days after confinement, that were perfectly white and absolutely without odor. I believe that if a careless obstetrician had introduced his finger or an instrument into the uterine cavity for these membranes he might have infected that woman."

The presence of such a source of infection as retained membranes and placental tissue is threatening, and yet the radical treatment by which, as a prophylactic measure, call for the curette for the uterus as a routine treatment, irrespective of hemorrhage or symptoms of retention, is considered to be very advanced. The curette is not always necessary to remove retained decidua, either immediately after abortion or in the event of the appearance of symptoms of local infection, as advocated by many. The uterus can be cleaned by the finger as a curette and afterwards irrigated if necessary and again the infecting mass can be diagnosticated by the introduction of the finger and removed manually, the endometrium afterwards being disinfected by the intrauterine douche. The curette should be reserved for those cases in which the process is one of acute infection of the endometrium, where digital curetting with irrigation has failed to reduce the temperature. The curette is apt to dislodge thrombi and penetrate the mucosa, thus opening a new channel for the absorption of infected substance.

Tamponing in cases of hemorrhage from abortion is a temporizing measure fraught with great danger of infection, and that where we have bleeding we are to empty the uterus as speedily as possible. Digital dilatation and extraction of the ovum and its remains are to be accomplished either by the finger or the sharp curette.

The clearest cut description of the treatment of postpartum hemorrhage is that of Schauta, who wrote as follows:

In seeking for the cause of hemorrhage, the practitioner must remember that while atony of the uterus is the most frequent cause, yet others may be present of equal importance. Such are failure of the uterine muscle properly to retract and close the mouths of the uterine sinuses; dilatation, degeneration, and atheroma of the blood vessels of the uterus; retained portions of placenta; lacerations of the genital tract opening blood vessels; varicose veins which have been ruptured during labor; bleeding from rupture of the uterus at the lower uterine segment; tumors, especially myomata and carcinomata, which become bruised and lacerated during labor. In the treatment of these cases it is essential that the placenta be delivered in such a manner as best to avoid uterine relaxation and hemorrhage. Schauta wisely advises that no effort be made to express the placenta during the first half-hour following delivery; he would even adopt Ahlfeld's suggestion, and allow two or three hours to elapse before removing the placenta manually. The Credé method is preferred when expression is possible.

In the treatment of hemorrhage caused by uterine atony, uterine massage is indicated and also hot douches; these are best given of sterilized water, or of some antiseptic solution, bichloride of mercury not being considered applicable in these cases. Ergotine may be given by hypodermic injection; the intra-uterine application of styptics is strongly condemned. The intrauterine tampon of iodoform gauze is warmly commended, and has given none but good results in Schauta's hands. In cases where a hemorrhage is persistent and severe, the blood coming from degenerated vessels in the site of the placenta, it may be necessary to adopt a procedure advised by Kocks. This consists in inverting the uterus as soon after the birth of the child as possible, and applying an elastic ligature about the cervix. In addition, iodoform gauze may be used as a tampon. After six hours the elastic band may be removed and the uterus replaced. When hemorrhage results from retained portions of placenta, the thorough exploration of the uterus and the removal of such portions will promptly check the hemorrhage. Hemorrhage from lacerated wounds in the genital tract is best controlled by suture, or ligature, or by a gauze tampon. In the treatment of the anemia following hemorrhage, the transfusion of dilute saline solutions is especially commended. Schauta describes a case where, after laparotomy, severe hemorrhage resulted; four hours after the operation the abdomen was again opened, and large clots and fresh blood were found. The hemorrhage was checked, and the threatening anemia of the patient was relieved by transfusion with salines.

Many teachers prefer curettement and packing of the uterine cavity, for beginning blood-poisoning in septic endometritis and peritonitis. Pryor states that "innumerable clinical facts as well as other facts show that the lymph channels are the usual and most serious carriers of this form of infection." Concluding from this that septic infection occurs by means of the lymphatics draining the infected endometrium, the seat beyond dispute, as he correctly argues, of beginning puerperal infection, he recommends the use of the sharp curette as soon as the diagnosis of beginning infection is established, stating that, "Its range of application is greater than that of any other instrument used in gynecology." Laparotomy at one time was the method par excellence of approaching and draining an infected peritoneum, yet Pryor writes, "I have almost come to the conclusion that when you can not check puerperal sepsis by irrigation, curetting, and antiseptic dressings, the case is beyond immediate surgical relief. By the latter expression I mean the ether, operation, etc., (in laparotomy), will destroy what little chance for life remains, and that it is better to let the woman alone. But if I did a section I would most certainly ablate the whole organ. Simple removal of the tubes and ovaries I deem worse than useless." On the other hand, we have the previous phases through which the subject of treatment has passed occurring in quick enough succession. Martineau wrote in 1884, "Refrain from all manipulations, all active interference as long as adenolymphitis exists,"

while Polk writes, "For the present, then, until we can improve our methods, I would suggest in the event of the failure of intrauterine drainage in these cases, an application of the open method of drainage (by laparotomy) to the surroundings of the uterus as an additional procedure."

Which surgical procedure should be adopted, curetting with drainage or abdominal section, depends upon the existence of the symptoms of a local peritonitis or those of an acute infection occurring from the endometrium. In the first case an accumulation of pus exists, either an abscess or a preëxisting pyosalpinx requiring drainage by abdominal incision; in the second there is an infected endometrium with lymphatic absorption, requiring curetting. Left to choose between curetting with drainage from endometrium and laparotomy with external drainage, we are required to make at an early stage an absolute diagnosis of the condition, our choice of treatment being based upon the character of the infection. On the one hand the absorption is usually so rapid and the development of symptoms so acute that to wait for the detection of a localized accumulation of pus before active treatment is instituted means death for the patient. On the contrary, the use of the curette for initial symptoms is dangerous and for the following reasons: First, the risk of perforation, although this is not a serious consideration in the earliest stage of involution, and when the instrument is used with ordinary care; second, the risk of introduction of septic material from without; third, the separation of thrombi at the placental site.

The curette is recommended when the endometrium is a seat of an acute septic process and the peritonitic and tubal involvement is recent and acute. The question is whether in such cases, after the development of these symptoms, the infection along the course of the thrombi and the lymphatics is not already too far advanced to be reached by this means of treatment? To abstain from every form of local treatment because efforts may be ill-timed is scarcely what we want; but we are to resort to methods bearing with them less risk and which show statistically better results. To surgical advances in this field to the subject, we are indebted for special accurate studies in pathology, which have thrown light upon the manner of infection and the character of the infecting elements. Asepsis in midwifery is due to the recent advances in surgery. These procedures, however, have their limit in actual practice, and it is a question whether by surgical means we can surpass the careful conservative treatment of to-day, the treatment which relies on absolute prophylaxis, the judicious use of salines, and calomel and stimulation.

Prophylaxis means absolute cleanliness, abstinence from unnecessary examinations, the use of the ante and post-partum douche, except in cases where unusual manipulations have been necessary, irrigation and the use of iodoform internally, and the application of the ice bag externally in the initial stage of infection. The following statistics from the records of the Philadelphia Lying-in Charity from May 1, 1891, to May 1, 1893, are of interest: Number of deliveries at term, 488; number of deliveries before term, 8; average highest temperature, 101 degrees; average duration of rise above 100.6 degrees, 4 days; mortality, 3. Of these only one required surgical treatment, laparotomy for obstruction. Among the number of cases reported there were 30 cases in which complications such as mastitis, eclampsia, enteric fever, mania, etc., were accountable for the rise in temperature. It will be noticed that the treatment followed, as noted above, has been altogether conservative; the mortality record shows laparotomy for obstruction of the bowels. A study of the records will show that the indications have been carefully observed, and that the results which have been attained are due to prompt and active treatment.

The management of difficult labor from pelvic contraction has been surprisingly changed in the past ten years. This has resulted not only in reducing maternal mortality, but in obviating largely the necessity of embryotomy. This latter result has rightly served as the plea for surgical intervention. Symphyseotomy and Cesarean section have come to occupy the most conspicuous position among obstetric operations, and it is our purpose to discuss here their relative merits, the various obstetric operations, including these, and will bring us to the realization of the importance of the exact study of the indications in every case. It will be most profitable to glance first at the merits of these more important operations and then to consider their advantages over the other forms of treatment advocated by the earlier school and by the more conservative teachers of to-day. Finally, should be mentioned the dangers of these recent operations—those connected especially with symphyseotomy—as we are at present in the stage in which the dangers are apt to be forgotten or overlooked. The question resolves itself into the choice of operation in individual cases, and its bearing upon the present discussion lies in the limitations to which the more conservative operations (induction of labor, version, application of forceps and embryotomy) have been confined. We must admit at this time that Cesarean section and symphyseotomy have gained a recognized position and that there are certain cases which require one or the other of these operations and preclude all other possibilities of treatment. Ordinarily, it is in simple flattened pelvis a conjugate diameter below 2⅗ inches that call for Cesarean section, and that symphyseotomy is reserved for cases in which the diameter is beyond this.

Hirst recommends induction of labor combined with symphyseotomy in "any grade of symmetrically contracted pelvis we are likely to see in this country." Does this not, therefore, substitute for Cesarean section symphyseotomy with induction of labor in cases where the Porro operation is not indicated? If so, what advantages does this form of treatment offer over those of Cesarean section, and what dangers does it bring with it? In this procedure we expose the patient first to the risk of infection incident to the induction of labor, and to the delay and manipulation of dilating the cervix; and, secondly, to the unavoidable risk of rupturing the vagina, lacerating the subpubic soft parts and hemorrhage from injury to the venous plexus surrounding the urethra, incident to the performance of symphyseotomy. On the other hand, Cesarean section requires skill on the part of an operator who has any claim to the title of an obstetric surgeon and admits of the delivery of the child without the after application of the forceps. Both operations require special surroundings and careful selection of the time of operation; but Cesarean section demands much less time for its performance and exposes the patient to less risk of infection.

Since the introduction into the United States of symphyseotomy "4 women of the 25 operated upon have died, and 6 children have been lost, three of the latter having been still born." To quote further, "Compared to the conservative Cesarean sections of the best European maternities, we find that symphyseotomy has a greater mortality, both for mothers and children and the difference is very marked as to the latter." In order

to obtain even the most favorable of the results in symphyseotomy cited above, the operator requires absolute control of the cases, and the most special adaptation of the surroundings, such as can be procured only in the most carefully conducted maternities. These conditions reduce the art of obstetrics to a surgical science and the practitioner stands toward his patient as a surgeon who waits only for the time of intervention to deliver her instead of depending upon the skill as an obstetrician to aid the natural process of parturitioner. This makes diagnosis the only essential factor in the case, a position which presupposes that art in diagnosis is unerring and leaves for the obstetrician only those cases in which the indications for surgical intervention are positively wanting.

This teaching makes the profession tend to disregard the necessity for forceps and version in cases of moderate contraction, and in those cases in which the operator has been called at an advanced stage of labor without any previous knowledge of the patient—where surgical interference is not to be considered.

Bumm some years ago took up the question of the histology of puerperal endometritis, which he reported on as follows:

He divides this affection into putrid and septic varieties. The first is characterized by the presence of saprophytic bacteria, septic germs being absent. The superficial layers of the decidua are involved, and the chemical products from the bacteria absorbed by the lymphatics produce fever and the other phenomena of intoxication. The peculiarity of this form of endometritis is the foul odor which characterizes the discharge. These cases are not at all uncommon, happening frequently after abortion. After the uterus has been washed out or curetted, the odor rapidly disappears and the fever falls. Pathogenic bacteria are not often found in these cases. A zone of infiltrating cells is found beneath the decidua, through which bacteria do not often penetrate. The infectious material in these cases is apparently the chemical product of the bacteria.

In septic endometritis, streptococci are the most frequent infective agents. This form of endometritis is found as localized, or endometritis followed by general infection. In the first the bacteria are shut off from the circulation by a layer of connective-tissue cells in the localized lesion; the streptococci do not, as a rule, penetrate this layer; after disinfection of the uterus recovery usually follows in these cases.

In cases of general infection the lymphatics are the usual conveyers of bacteria. Occasionally the infective material is carried by the venous channels of the uterus, thrombosis developing, followed by puerperal pyemia. The practical conclusion of these researches is distinctly in favor of the local treatment of puerperal endometritis. It should be noted that in the septic variety the rapidity with which infecting bacteria gain access to the general circulation renders the prompt disinfection of the uterus indispensable. When the practitioner is satisfied that a rise of temperature after labor is not due to lesions in the outer portion of the genital canal, he should at once disinfect the endometrium by the intra-uterine douche, accompanied by the use of the blunt curette and the intra-uterine aniseptic suppository.

—The present premier of France, Dr. J. L. E. Combes, graduated in medicine in 1867, and practiced eight years. He has been in politics since 1875. He is said to be the smallest man, physicially, who has attained such political eminence since M. Thiers.

THE TREATMENT OF INSOMNIA.

BY G. R. REYNOLDS, M.D.

IN the treatment of insomnia, occurring in children, it will depend upon the age of the child when it is due to digestive trouble. The condition may be the result of too frequent nursing, to improper physical condition of the mother, or to some peculiarity about her milk. With bottle-fed children the insomnia may be traced to the bottle or its contents. Should the insomnia continue after these precautions have been taken, a teaspoonful of lime-water or of Vals water may be given between consecutive nursings, and as a laxative a teaspoonful of syrup of chicory, or a pinch of magnesia in sweetened water. If insomnia is due to premature weaning it will usually disappear if the child is restored to the breast. If weaning has occurred at the proper time the regulation of the diet will go far toward relieving any tendency to insomnia. When insomnia is dependent on digestion in children two years of age and upward a dose of wine of rhubarb or of wine of pepsin at suitable intervals is indicated.

All food should be well cooked, and should be finely divided if there be any suspicion that it will not be well masticated.

Insomnia may be attributed to nervous disorders, which may be divided, in this connection, into several groups. The first group would include cerebral sclerosis, chronic hydrocephalus, cerebral tumors, bony lesions, with abscess of the brain. For insomnia from cerebral sclerosis, bromide of potash may be given until relief is obtained, either with or without the iodide. Should this be unavailing, valerian or chloral may be given, with calomel as a laxative. Similar treatment will be suitable with cerebral tumor, or chronic hydrocephalus, but not with cerebral abscess. The insomnia with the latter condition will continue until the pus is evacuated by suitable trepanation. The second group from which insomnia may result includes acute congestion, incipient meningitis, and cerebral irritation. With acute congestion, one should use mild revulsive agents, and, in addition, quinine, aconite, the bromides, and calomel. With incipient meningitis revulsives are also indicated behind the ear or at the nucha. With cerebral irritation, the bromides and chloral will prove beneficial, the latter being given by the rectum. For insomnia with headache, in growing children and those who droop under the confinement of school, a course of bitter tonics, gymnastics, lukewarm baths, and diminution of the hours of study, should be advised. With the neuralgias and chorea, the insomnia may be antagonized by suitable doses of antipyrine. If a child is hysterical, iron, valerian, assafoetida, and warm baths, should be used the same as if no insomnia existed. With epilepsy, if the bromides are ineffectual, strychnine and belladonna should be tried. With all the foregoing conditions galvanization of the head will be most advantageous in adults, but from the anatomical peculiarities of the case, if it is used in children, the current must be very weak, and not employed more than half a minute at a time. Static electricity is not open to the same objection, and gives admirable results if the insomnia proceeds from chorea, hysteria, headache, gastro-intestinal disorder, disturbed mental balance. When insomnia is due to pain, as in Pott's disease, coxalgia, white swelling, etc., large doses of quinine will sometimes afford relief. If due to the fevers, opiates must be given, but very gradually, for their depressant action must be remembered, and also the fact that they lock up the secretions. With influenza, quinine or antipyrine

will relieve insomnia, and with the rheumatic diathesis the same drugs with the addition of salicylate of soda.

In considering drugs for adults we find that hydrate of chloral is the strongest hypnotic, but it is dangerous in large doses. It is excellent in delirium tremens, status epilepticus, and in convulsive disorders. It is, however, to be avoided in heart disease, hysteria, cases in which there is difficulty in breathing, and in those persons in whom it produces no initial stage of excitement, and esespecially no alteration of the pupil. Paraldehyde in long continued or large doses gives rise to a condition resembling that produced by alcohol. It is of value in hysteria, alcoholism, acute insomnia, the itching of jaundice, etc. As it is eliminated by and irritates the lungs, it is contraindicated in bronchial conditions. Its action is good in cardiac asthma; bad in emphysema and in arterio-sclerosis. It is not to be used in chronic insomnia and in conditions of extreme excitement, but is valuable in insomnia from moral causes and in the restlessness of epileptics. Amylene hydrate disagrees with the stomachs of many patients and produces slight swelling of the hands and face. It is given in the insomnia of all diseases; also to allay cough. Sulphonal acts slowly, and is consequently not of service in acute diseases and to allay pain; but of value in conditions with motor unrest. After prolonged use it produces dizziness and a sensation of ataxia. Recently, too, cases of serious poisoning by this drug have been reported.

In comparing the pure narcotic strength of these drugs they may be arranged in the following descending scale: Morphia, chloral, amylene, hydrate, paraldehyde, sulphonal. If, however, they are arranged in the order of the proper hypnotic and uninjurious dose they stand: Chloral, sulphonal, amylene hydrate, paraldehyde, morphia.

In stubborn cases, the use of hypnosis has been recommended by the French writers especially; so it is well to know the best methods in this form of therapeutics. The proper method of inducing hypnosis as recommended by Lieboldt and Bernheim, consists of first securing the confidence of the patient, and then telling him to look the operator steadily in the eye and to think of nothing but going to sleep. The process may be materially aided by suggestive remarks addressed to the patient, and by placing two fingers upon the face; the fingers being finally pressed gently upon the eyelids. Men and women are about equally susceptible to hypnotism. Although so much has been written on its use in hysteria, the indications for employing it are far from clear. It may be of service in some forms, but recovery, if secured, is not permanent. Hysterical paralyses, especially abductor paralysis of the larynx, hysterical amblyopia and amaurosis, and hysterical convulsions are often decidedly benefited. One need never be discouraged by the first trial to secure hypnosis in a case of hysteria. Not much is to be hoped from it in hystero-epilepsy. The improvement in chorea is often rapid and marked, especially when the movements are general; a number of daily sittings, continued for months, being usually required. In insanity the results are not satisfactory. In delirium tremens the effect is often excellent, and the method finds a hopeful field in the treatment of the alcohol habit. In masturbation it has been used with success; and in incontinence of urine in children it has, in the hands of Lieboldt, been employed with a large percentage of cures. Herter doubts whether it is of any real advantage in joint affections, though good can be expected in recent neuralgia, and he has succeeded in cutting short or mitigating the attacks in certain instances of migraine. The occurrence and duration of menstruation have been influenced by it in a few cases. It is not to be recommended in surgery as a substitute for the ordinary anesthetics, except in cases in which the latter are contraindicated. In insomnia it can often be employed with good results, gradually substituting it for drugs. As regards the use of hypnotism in parturition, the author concludes that it induces sleep, and is in no way prejudical to the uterine contractions; that it has no tendency to produce postpartum hemorrhage on any other bad result; that it is in no way comparable to chloroform in labor, and should only be used in the rare cases in which the usual anesthetics are contraindicated.

The bad results following it, and which have been urged against it, can for the most part be entirely antagonized by suggestion. He proposes, as a general rule, that no one should be hypnotized without first obtaining his or her formal consent, and that the operation should always be done in the presence of a third person. No suggestions should ever be given, except those necessary for the patient's improvement in health.

Many authorities reject the dynamic theory that sleep is a passing into a condition of rest of those parts of the brain which preside over consciousness and voluntary procedures. The mechanical theory rests on the distribution of the blood throughout the body, and, as regards this, it seems likely that the old view, that during sleep there is an anemia of the brain, is the correct one. The subject is, however, by no means clear, and it is not certainly known whether the sleep produces the cerebral anemia or vice versa. The measures often directed to the production of sleep by diverting the blood to the periphery, such as warm baths, etc., sometimes are very useful, sometimes fail altogether. The chemical theory supposes an auto-intoxication by some hypnotic substance produced in the muscle as it grows tired. A similar substance, however, sodium lactate, when ingested does not produce sleep, though it is known that procedures which form lactic acid or its salts in the organism dispose to sleep also. Such are exercise in the open air or in institutes for the milk or whey treatment. In considering the indicatio causalis, a distinction must be made between those causes which act directly on the brain, preventing sleep, and those acting indirectly. In the first class are diseases of the brain, as well as excessive mental work and excitement of the emotions. In focal cerebral lesions surgical interference is sometimes of value in curing the sleeplessness; in all others symptomatic treatment is also to be employed, since the removal of the cause, as in overwork of the brain, is not followed by relief of the insomnia.

It is not so much the work itself, as its union with a certain amount of emotion, which produces insomnia. Even long-continued emotion, passive, as care, or active, as fear, revenge, etc., without excessive mental work may produce insomnia, and in the treatment of it it is necessary to remove the patient from his surroundings by travel, and to aid the cure by wine, bromides of potash, and paraldehyde. When insomnia is due to the combination of emotion with overwork, the treatment is far more difficult. These patients must for months or years be withheld from work and, if possible, at first be confined to the house. The Weir-Mitchell cure, electricity, and, in many cases, phenacetin, are of value. So also is a cold-water cure in the mountains. Among indirect cases of sleeplessness may be included conditions which produce somewhere in the body pain or disturbances of circulation, diseases of the blood, and the entrance into it of substances foreign to it. The indicatio causalis in these cases is to remove such causes as working late

at night, the use of coffee, tea, tobacco, etc., and intoxication with arsenic, lead, and mercury. Indirect insomnia is often found in general diseases. Here the diminution of the bodily temperature is often of value, or, in diseases of the circulatory apparatus, the use of means which will regulate it. In the insomnia of chronic disease many causes operate. Thus, in diabetes, the hunger, thirst, and the desire to urinate, interfere with sleep. In diseases of the kidneys, insomnia is often the first indication of interstitial nephritis and of uremia. But in all these chronic diseases the indicatio causalis often cannot be filled.

Symptomatic treatment must, indeed, be employed in all cases; and narcotics and sedatives have been principally used. In the choice of these, the drug, the disease, and the individual are to be considered, as well as whether the insomnia is acute or chronic. If acute, the remedy must be prompt and harmless; but if chronic, quickness of action is not so important. A harmless drug is one which is not dangerous in small doses, does not irritate the digestive tract, produce congestion of inner organs, or diminish the strength of the heart. In chronic insomnia its continued administration should not in any way injure the organism. It is, indeed, best to avoid narcotics as far as possible. Since the need of sleep varies greatly with different patients, and the hours in which sleep is the soundest and most beneficial are not alike throughout the night, it is evident that these and other circumstances must influence the choice of the remedy and the time of its administration. As sleep must be obtained in the most natural way possible, the belief must be aroused in the patient that he must go to sleep, the muscles must be relaxed by proper position, and the room should be darkened. A proper external temperature is important, the best being 10° to 14° R. A local sensation of cold, as in the case of cold feet, is a great interference with sleep; though keeping the head cool is an advantage. The sense of hearing may often be made of value for producing sleep; a soft, monotonous sound being useful for this purpose. The action of hypnotism is not to be undervalued.

Among the drugs used for the treatment of insomnia, the first to be mentioned is alcohol in its different forms. In the severer varieties of chronic insomnia, and especially in those persons disposed to alcoholism, it is best to avoid it, but in the lighter forms it is often very useful. Opium and morphine are excellent hypnotics, and produce sleep most like the refreshing natural sleep. Caution must be exercised in conditions of congestion and in weakness of the heart. The formation of the opium habit must also be guarded against. In children bromide of potash is to be preferred. As I have said hydrate of chloral is the strongest hypnotic, but is dangerous in large doses.

THE RELATION BETWEEN CHOREA AND RHEUMATISM.

BY H. M. HAYWOOD, M.D.

MARFAN, the well-known French authority, has made exhaustive studies of this relationship and concludes that chorea is either preceded by acute rheumatism or by an infectious disease; he is distinctly in favor of the infection theory of chorea as a result of his researches and believes it is a neurosis provoked by a nonspecific infection which is developed in predisposed soil. He rejects theories which make chorea a specific infection or a neurosis of cerebro-spinal evolution; he believes that there is an etiologic identity between chorea and endocarditis, the two arising from the same cause, which explains their coincidence. On the other hand, Mitchell and Rhein endeavor to explain the motor symptoms of chorea as follows: "1. Cases of chorea which show some at one stage of the disease, some throughout their course, an absence of movement during rest, requiring muscular action to develop what may be either mild or severe chloreiform movements. 2. There are cases in which the movements are continuous during rest but become greatly increased on intentional effort. 3. There are cases with choreiform movements which disappear entirely when muscular acts are performed. 4. In some cases the movements seem to be unaltered by voluntary muscular efforts. 5. There are cases which present during their course at different times more than one of the types described.

One of the most interesting papers on this subject was written by Lewis, covering a period of fifteen years. He studied the history of 1,383 separate attacks of chorea, and 673 separate attacks of acute inflammatory rheumatism. Half the cases occurred in Boston, the other half in Philadelphia. Lewis's idea was to collect the statistics of these two diseases from two cities, widely separated geographically. At the same time the record of the weather bureau was extracted from the monthly reports of the Signal Service Bureau. No attempt was made to substantiate any theory, but simply to consider the relationship existing between the number of attacks of these diseases and the number of storm centers passing within four hundred miles of Philadelphia per month. Lewis took his storm tracings by obtaining the number of tracks of centers of low barometer, passing within four hundred miles of the localities studied, the four hundred mile radius having been previously found to furnish the tracing most closely resembling that of chorea. Lewis acknowledges the following sources of error, but he was unable to eliminate them, and he does not consider that the final results are vitiated thereby:

"1st. The attacks recorded are but a portion of those occurring in the localities studied, while the meteorological data are complete as far as they go.

"2d. The division of the year into months of unequal length is unfortunate but unavoidable, and all the numerical tracings, therefore, show a tendency to conform to this monthly irregularity; but even this does not vitiate their accuracy, as a reduction of the figures to a supposititious monthly length of thirty days does not materially alter their peculiarities.

"3d. Monthly *averages* tend to obliterate daily peculiarities and variations, for, by taking the monthly mean of any element the very effect we wish to study may be smoothed out. This is further accentuated when monthly means for many years are taken.

"4th. The methods of recording the tracks of centers of low barometer (storm centers) are, in the language of the weather reports, 'approximately correct' only.

"5th. Much difficulty has been encountered in obtaining definite answers as to the exact time of onset of the attacks. A large number of cases have, therefore, been discarded on this account, and only those retained for study that were apparently beyond doubt.

"This objection probably pertains less to the records of the Orthopædic Hospital and Infirmary for Nervous Diseases than to hospitals in general, owing to the unusually accurate method of taking histories on blanks printed especially to investigate the various nervous diseases—the exact date of onset of chorea, for instance, being one of the points particularly investigated. A failure to note this point correctly would naturally have a tendency to cause the case to be recorded as originating later on in the year than was actually the case.

"6th. 'Habit chorea,' as far as the Philadelphia statistics are concerned, has been excluded from the list, but the cases due to *fright* have been unfortunately included with those due to other causes."

As a result Lewis found that there were the fewest attacks of chorea in November, or 3.3 per cent.; a rapid rise follows in December to 7.8 per cent. The tracing remain almost stationary during January and February, and then suddenly reaches its highest point in March, or 14 per cent. A fall occurs in April to 8.7 per cent.; a rise in May to 11.1 per cent., and then the tracings gradually sink to the lowest point in November. This is the record covering the full fifteen years.

This statement is true of both cities; this probably proves the seasonal relation of chorea, while the rise in March is undoubtedly due to overstudy, culminating at this time. Sachs states that many of the attacks occurring in early autumn follow upon the opening of school, and that in March the strain of winter duties is greatest, while Sinkler states that the annual examinations in our schools give a number of cases of chorea. The school examinations in Philadelphia take place in January and February, and probably at about the same time in Boston.

The next etiological factor is the weather; using this word in its broadest sense to express the varying atmospheric and electrical phenomena, making a very complex whole. It is very difficult to trace any resemblance to stormy or cold weather, for the almost highest average occurs in the pleasant months of May and June. The relation to the fall of the mean relative humidity and barometer tracings is more closely seen.

Taking up the relationship of acute inflammatory rheumatism we find that April has 16.5 per cent., and then a rapid fall occurs until the low point of the year is reached in September with 5.1 per cent. The percentage now rises until the high point is reached again in April. There is marked relationship between the fluctuations of the storm record and rheumatism, the high point of the storms antedating the month of greatest number of attacks of rheumatism as if its influence was preparatory.

"If it is conceded that the relation is positive, as far as cause and effect are concerned, between storm and neuralgia, why may not the same relationship, although possibly to a different degree, be conceded to exist between the varying meteorological conditions and other nervous diseases, notably chorea, which occur in children who are in an unstable nervous condition, depressed in vitality, and possibly overworked and overtaught.

"The conclusions drawn from this paper are as follows:

"1st. The seasonal relationship of chorea and rheumatism is proven.

"2d. There is a marked resemblance in form between the chorea and rheumatism tracings and the tracing representing the total amount of sickness present in the community per month.

"3d. This monthly variation in amount of sickness is not a cause of the fluctuation in the chorea and rheumatism tracings, but is itself probably due to the same influence.

"4th. While overstudy assuredly plays a most important rôle in predisposing children to chorea, the months of greatest study, and therefore presumably of the greatest depression of bodily vigor, do not coincide with, or even precede with any regularity, the months of greatest frequency of this disease.

"5th. It is more than probable that 'weather' is one of the most important predisposing causes of both of the diseases studied in this paper, although precisely which meteorological factor is the baneful one does not clearly appear. No one element of 'weather' explains fully the fluctuations of these tracings for chorea, although in the barometer and storm statistics the relationship appears to be closer than to any other etiological factor or factors that have, as yet, been advanced.

"It is as if a conclusion was attempted to be drawn from premises, some of which are imperfectly stated or not clearly understood, or possibly even overlooked.

"6th. Either this apparently close relationship must be acknowledged to have an important place in the etiology of these diseases, or else the resemblance must be considered to be purely accidental, which seems most unlikely from a study of the tables shown.

"More accurate deductions do not appear possible from the data at present at our command."

Let us take up the history of a few cases and study the relationship between these two conditions—chorea and rheumatism. The first case was that of a young girl aged thirteen, who came under my care in November, 1900. She was an intelligent, bright faced girl, the daughter of the neighboring clergyman. She had a bad family history; there was nervous trouble of all kinds in the family, and her brother and sisters were all under care, the majority of the time, with a succession of ills. It was one of these unfortunate families which never seemed to be free from the doctor's visits.

This child had brown eyes of that type known as scrofulous, with brown hair and skin. She had never menstruated, and showed marked choreic movements; she made grimaces and threw her limbs around with that quick nervous action seen in these cases. She was unable to carry her fingers to her nose or approximate her finger tips, although her mother thought that her movements were worse because of the confusion of my examinations of her. Yet there was also a history of her being unable to feed herself. She had been going to school and studying hard, and there was some worry over the fact that the other scholars had mimicked her. There was never any history of convulsions, but the history of rheumatism, both acute inflammatory and muscular, was strong. She had had inflammatory rheumatism and endocarditis, though not under my care. This had left her with a marked double murmur. The heart's apex was found in the left nipple line and the murmur could be heard even over the region of the back. In the family history the neurotic element was strong; the maternal grandfather had died insane, the paternal grandmother lived in the house with her, and she was blind from some unknown cause. There was a mystery about this case, for I never was consulted about her, and in fact, did not know there was such a person around for some time. As the family were intelligent and very religious, I felt that they had some good reason for keeping this patient in the background. The father was a sufferer from asthma, while the mother had had inflammatory rheumatism several times and chorea as a child. Two maternal aunts had died of inflammatory rheumatism and had had chorea, while the family had lost two children in convulsions and the other child had a terrible "cleft palate," and the baby went into convulsions on the slightest provocation.

Under treatment this case improved on arsenic and iron with the abolition of all study and duties and came under my care later for a slight attack of inflammatory rheumatism. The child will never be robust and there is undoubtedly a cycle of these two diseases.

The next case was seen in hospital work; the child, a

girl, aged thirteen, had been laid up for a month before admission, with rheumatic pains without swellings. A week before admission choreic movements developed, chiefly on the left side. Here the family history was blank, there being no history of any chorea, rheumatism or any other diathesis or taint. At the apex was heard a loud systolic murmur as far as the axilla. The heart's apex was found in the fifth space in the nipple line; the urine was healthy and the temperature began to rise until it reached one hundred and two, ten days after admission. At the same time the joints began to enlarge and pericardial friction was detected. Ten days later this had much subsided and later the choreic movements disappeared almost entirely.

The third case which I will report is that of a nurse girl, fifteen years old, who caught cold at her work and then noticed swelling in various joints. Two weeks later she developed chorea which became so bad that she was unable to talk. Here again there was a history of chorea and rheumatism running through the family.

In this connection a remarkable case reported some years ago by Duckworth is interesting as showing how severe these cases may be. I quote it because I have never had such a case myself, but realize its possibility.

This patient, F. M. S., aged sixteen, came in on the 5th of December. She was a box-maker.

The history is instructive. Her mother believed that there had been slight fidgety movements for some weeks previously. Five weeks ago she had had a tooth removed without an anesthetic, and after this the movements were observed to be greater. They were very violent on admission. She spoke very little.

At the end of August she had rheumatic fever, and was laid up for three weeks. The catamenia appeared once six months ago, but not since. She had had no previous attack of chorea.

The family history disclosed the fact that the mother had had rheumatic fever twice since the birth of this daughter, and also that she had suffered from chorea with rheumatism at the age of sixteen years. One maternal uncle had also had rheumatic fever. The father had had rheumatic fever twice since the birth of this daughter. The paternal grandfather had also suffered from it.

On examination the respiratory movements were found to be irregular. The heart's apex-beat was felt in the fifth left intercostal space inside the nipple line. No thrill was perceptible on auscultation, but a soft systolic murmur was heard at the apex. The pulmonary second sound was accentuated. The pulse was 120, of fair volume, but slightly irregular in rhythm. The abdomen was natural.

On the knees, malleoli, and elbows were abrasions caused by the violent movements. The knee-jerks were apparently rather increased in activity. The plantar reflexes were brisk. (I may remark, parenthetically, that the latter are sometimes rather in abeyance in cases of chorea.)

This patient was placed on a water-bed, and was ordered ten grains of chloral hydrate at once, to be repeated in four hours, and subsequently thrice daily. Milk, beef-essence, and wine (℥vi) were given. Four minims of liquor arsenicalis three times a day were also prescribed.

The effect of the chloral was scarcely appreciable. The movements continued with great violence and energy, especially when there were any by-standers. There was very little sleep obtained.

The chloral was given every two hours in ten-grain doses with better effect. The pulse was 140 on the 7th of December. The cardiac murmur was unchanged. The temperature, having been below 98° F., reached normal on the night of the 7th. The report on the 9th was that more sleep had been secured, movements quieter, but voluntary power greatly impaired. The grasp of the hands was very feeble, and there was much difficulty in protruding the tongue. The temperature rose to 99.6° F. this morning (December 9).

There was a worse report on the following day. There had been little sleep, and a noisy, restless night had been passed. The patient had bitten a piece out of the medicine-glass. The elbows were severely rubbed. The hands, elbows, and knees were all secured in cotton wool and bandaged. On the 12th the patient was very wild and noisy, threw herself out of bed, screamed a good deal, but was seemingly rational when spoken to. The tongue was dry, with sordes on it and on the teeth. The temperature was apyretic. During the last few days full doses of chloral and bromide of potassium with henbane and cannabis indica had been given, with imperceptible effect. Several hypodermic injections of morphine (gr. ⅓) were also adminisetered, and the pupils became contracted and some deep sleep was obtained.

This poor girl was kept on mattresses on the floor of the ward, and her movements were restrained by the nurses. The pulse continued regular, 150 in the minute. Chloroform was administered on several occasions in conjunction with the morphine, to secure sleep, and this was obtained for eight hours continuously.

On the 13th the temperature reached 101.4° F., and the pulse-rate remained as on the previous day. The skin was dry and harsh. At night the temperature rose to 102° F. Chloroform was given at intervals, and bromide of potassium was ordered in drachm doses every two hours. On the 14th there was evident wasting, and the patient was becoming cyanosed; motions passed involuntarily. Death occurred suddenly this evening.

On the next day, at the autopsy, no organ was discovered to be changed except the heart. The mitral valve had three cusps, the smaller curtain being divided into two still smaller ones by a gap. This condition may have been due to a former, possibly a congenital, attack of endocarditis. On the auricular surface of the valve along its edge was found a continuous row of beaded thickenings. Some doubtful thickenings were present in the tricuspid valve. The cardiac muscle was pale. There was no sign of embolism in the brain.

Duckworth does not regard chorea as a disease but a "disorder," believing it to be only a symptom. According to this authority, chorea is a disorder of early life, more cases occurring before puberty than subsequently; the female sex being more liable to it than the male. This form of chorea rarely occurs in the adult and in old persons.

Some years ago Garrod and Herringham recorded each eighty cases of chorea with reference to their antecedents; both found that in the majority of cases there was a previous rheumatic history. Garrod noted that some cases occurred in members of families who although not having suffered from overt rheumatism had obvious rheumatic disorders which is a point of prime importance. Such information as we can gather on the subject show that in at least thirty-three per cent. of choreic cases there is a history of rheumatic antecedents but his percentage undoubtedly falls short of the right proportion.

Rheumatism or the rheumatic diathesis is the predisposing cause in many cases of chorea, the determining active factor being some sudden emotion or long con-

tinued strain. It cannot as yet be proved as true of every case but its importance is being more and more recognized by the profession. The theory that chorea is due to embolisms of the minute cerebral arteries has claimed some attention and this view presupposes endocarditis and that particles of fibrin are shed off from the inflamed valves and driven into the small vessels of the coppora striata. This theory unfortunately has no evidence to support it, the few fatal cases on record not endorsing it.

Rheumatism is specially a disease of motor structures affecting the heart and joints; the nerve centers for the heart are in the medulla oblongata while those for the joints are supposed to be situated in the same region. Taking up the evolution of chorea in a rheumatic family we find that chorea is also an affection of the great nerve centers and it is not hard to conceive that a kindred vulnerability in the great motor centers should predispose to one or the other or to both. This susceptibility may be a part of the diathetic proclivity of rheumatism, and given some direct irritant, the perverted action of the motor centers is precipitated. Duckworth calls these conditions neuro-humoral. "He believes that there is a peculiar basic or fundamental condition—a neurosis, if you will—which is capable of hereditary transmission or transformation, in the subjects of which may be set up at one time rheumatic, and at another choreic, manifestations. This view will explain many cases of chorea in which, even after skilful inquiry, no history of rheumatism, personal or family, can be obtained. The rheumatic evolution has not occurred; but the central motorial instability has given token of its presence in the form of chorea. The future life-history of some of these so-called non-rheumatic cases shows that rheumatic manifestations may supervene later, thus confirming the connection. If we accept this view, it is not difficult to conceive, further, that eccentric sources of irritation may excite chorea in subjects thus predisposed to motorial instability. Some light is also thrown by this theory on the value of arsenic in chorea. It is recognized as a most useful remedy in many cases of chronic rheumatism, promoting better nutrition and a more stable condition of the nerve-centers; and thus it counteracts the conditions on which these states mainly depend."

RETROSPECTIVE DIETETICS.

Dyspepsia—A Simple Remedy.—A physician has recently called attention to the use of water, not only as a remedial and therapeutic, but also as a mechanical agent in the treatment of certain forms of dyspepsia, especially those forms characterized by a fulness in the left epigastric region, with frequent eructations of sour and acrid matter, accompanied by loss of appetite, insomnia, and a mental condition closely allied to melancholia.

Let the patient drink from one to three pints of water one hour before each meal, and then comfortably seat himself in an easy rocking-chair, and rock backwards and forwards one-half hour. The rocking will agitate the water in the stomach, and wash the walls completely, detaching any mucus that may be adhering, and dilute and mix the contents thoroughly. By this means absorption will be more rapid, and as a consequence the skin, kidneys and the bowels will act more freely, eliminating from the blood uric acid and all effete and deleterious matter, while the stimulus of the water will cause the stomach to contract, and gastric juice to be secreted in such quantity as to cause the function of digestion to go on uninterruptedly and painlessly.

Water Assimilation.—A fact, perhaps, not generally known, says Health, is that water as well as food requires to be assimilated to properly fulfil its natural offices in the system. Water is not readily incorporated into the blood serum, thinning it, increasing its solvent qualities, and lessening its plastic properties, unless it is drunk in response to thirst, such as normally follows good digestion, brisk exercise, eating salt foods, a hot bath, fever, etc. Adventitious water, water taken into the stomach without appetite or demand for it, lingers long in the digestive organs, often producing a feeling of weight, followed by gurgling noises. Unless measures are employed to stimulate the assimilation of water by creating a legitimate demand for it, as expressed by thirst, it is not advisable to force too much on the system. A single glass between meals and at bedtime will wash out the stomach as well as several where the individual manifests no desire for or an actual repugnance to water. Indifference to a fluid which constitutes three-fourths of the human body is abnormal, and requires treatment; but the treatment must consist in establishing a physiological need for water in the system, not in forcing nature by distending the digestive organs with a heavy fluid.

Blood for Babies.—In the course of the second year there comes a time when the milk diet begins to be insufficient for the growing child, and nature calls for a change, while yet the system is in many cases unprepared for solid food. This kind of deadlock results in diarrhea, or constipation, anemia, restlessness, fretfulness, etc. In such cases the fit and radical remedy will be found in the administration of say ten drops of bovinine in a little milk, at intervals of three hours.

The following case is reported by Dr. T. J. Biggs: Little Robert Valverdie, a patient who came under my care in the condition of malnutrition above described (after trying all the usual medical helps to no benefit), was immediately restored by the direct blood treatment. On the second day of taking bovinine, the constipation and other trouble began to be relieved, and on the third day all signs of ill health had disappeared. This simple treatment was continued for three weeks, the child thriving beautifully.

Points in Dietetics.—The following are extracts from a bulletin lately given out by the State Agricultural Department of Minnesota: The opinion entertained by a great many people that whole wheat and graham bread is more nutritious than that made from standard patent flour, the flour used in everyday baking, is erroneous. When milk was used as a ration with bread, butter, beans, eggs, and potatoes, all the protein of the milk was digested, and in addition 4.91 per cent. more of the protein of the other foods with which it was combined was digested than when the milk was omitted. The highest degree of digestibility was secured in a mixed ration. Experiments made with butter showed that it has a high degree of digestibility, 98 per cent. of it being available to the body. Cheese should be used in the diet regularly and in small quantities rather than at irregular intervals and in large quantities, as is frequently the case. Cheese ordinarily is one of the cheapest and most nutritious foods that can be procured. It is possible to secure a larger amount of digestible nutriments and available energy from cheese costing 15 cents a pound than from meat costing 10

cents a pound. Oatmeal, like cheese and beans, is slow of digestion, requiring much intestinal work for the digestive process; but if well prepared and thoroughly cooked it is a suitable food for persons of all habits.

The Denutrition Cures of French Authors.—Kisch (*Therap. Monat.*, XVI, 1, 1902, p. 9, *Am. Med.*) reviews briefly the methods of treating obesity in use among French physicians. Dancel was the first to restrict the quantity of fluid; he allowed only 800 grains of wine and water, with a small cup of black coffee twice a day. Robin restricts the quantity of water in excessive assimilation, but advises free drinking of water when there is deficient disassimilation. He orders his patients five meals a day, and permits plenty of cold lean meat, but restricts the quantity of bread and leguminous vegetables. See advises his obese patients to drink freely, preferably tea and coffee. He orders hot tea at breakfast and between meals, beside water, lemonade, and carbonated waters. He gives albuminous foods and fats in ordinary proportions, 120 to 130 grams of the former, and from 60 to 90 grams of latter; carbohydrates are practically forbidden, but vegetables are freely allowed. Bouchard prohibits the eating of fat, and depends chiefly on milk and eggs, 1,250 grams of milk and five eggs being given in five meals. A strict diet of this kind is to be kept up for 20 days, after which a limited and selected diet must be continued for several weeks. Dujardin-Beaumetz allows 300 grams of red or white wine, or carbonated waters during meals, or, if the patient does not drink during meals, a somewhat larger quantity between meals. Proust and Mathieu have prepared three graduated diet-lists for the use of obese persons. These, as well as the list advised by Dumont, are given in full. With the exception of Germain Seé, all the authors cited agree on the necessity of restricting the quantity of fluid to be ingested. Kisch defines the indications for withdrawing fluids as follows: In the plethoric class, including high livers, those who have an hereditary tendency to obesity, women at the menopause, and certain alcoholics, the use of water should not be restricted. In the case of anemic persons suffering from obesity, in whom the total quantity of fluid in the body is increased instead of being diminished, there is no objection to a moderate reduction of the fluids allowed. The systematic withdrawal of water is of the greatest value finally, when the blood has already become hydremic, and beginning fatty degeneration of the myocardium has led to cardiac insufficiency and congestive phenomena.

The Physiological Uses of Sodium Chloride.—Dastre (*Rev. Des Deux Mondes*) inquires into the reason for the instinctive and peculiar employment of common salt over and above the quantity naturally contained in foods. This taste, the writer remarks, is by no means universal. Herbivorous animals crave salt, but the carnivora do not, and a like difference has been observed since very ancient times in the human race. Hence Bunge concludes that the desire for salt arises mainly from a vegetarian diet. He thinks that as plants contain much more potash than meat does, sodium chloride is required to offset this in the internal economy, of animals that live on vegetables. Dastre does not accept this explanation, though admitting that a desire for condiments is common among such races. Thus the Abyssinian counteracts the tastelessness of his millet with a sauce containing pimento, and in India curry is employed with rice. But condiments do more than merely please the palate. By stimulating the secretion of gastric juice, they promote digestion, and thus have a distinct physiological office. In this direction, however, according to Dastre, salt goes much further than spices. Sodium chloride, beside stimulating the output of gastric juice, supplies one of its most important constituents, viz., hydrochloric acid. In this process, the salt taken with the food is first dissolved in the stomach and carried into the blood. A part of it is subsequently withdrawn from the blood by the gastric secretion, and must be replaced—which causes the craving. Inferring from various circumstances that it is the chlorine and not the base (sodium or potassium) which is needed for promoting digestion, Dastre and an associate experimented with other chlorides. They found that the secretion of gastric juice is greater when magnesium chloride is administered than with sodium chloride.

Dastre mentions that the tears and nearly all the secretions, like the blood, are salt, and also that when an animal has been bled to exhaustion, a saline solution may be injected into its veins with good effect. Similarly, sodium chloride stimulates the heart muscle in weak invalids. A Chicago investigator, Professor Loeb (of whom, probably, the Frenchman never heard) has more recently revealed a fact which may be worth considering in this connection. Stimulus of nerve and muscle is attributed by him to electro-negative elements. Common salt, analyzed, produces electro-negative chloride and electro-positive sodium. It may be that the chlorides mentioned by Dastre as exerting an influence on digestion, derive this property from the electrical nature of the chlorine.

A STRANGE TALE.

A strange tale comes from New Haven, Conn. (*Medical Dial*), to the effect that with a round loaf of rye bread, and three lighted candles stuck through the crust as points of an equilateral triangle, Noritz Kopperl, an Austrian, located a drowned body in West River after all other efforts had failed.

John Birmingham, 13 years old, was drowned there while bathing. Men dragged the river unsuccessfully. Kopperl, a fruit vender, about 45 years old, happened along in his wagon and became interested. He told Sergeant McGuire, of the police squad, how the Hungarian peasants find a dead body. The crowd laughed derisively. Kopperl soon returned with a big round loaf of bread and three candles. He inquired at what spot the boy went down, and, placing the loaf in the river at that point, lighted the candles, already set into the loaf.

"This loaf will follow the course of the body. Put your hooks in where it stops," were his directions. The bread circled several times and floated down stream. It soon stopped as if held by some barrier. The searchers threw their hooks in and brought the body to the surface, scarcely a yard from the loaf.

Mr. John Carnrick, of the firm of Reed and Carnrick, died at his home in this city January 7th of paralysis, in the sixty-fifth year of his age. Mr. Carnrick was extensively known throughout the country as the manufacturer of medical preparations for professional and home use, the most valued of which he himself originated. Mr. Carnrick leaves a widow and four children.

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ASSOCIATION FOR ADVANCEMENT OF SCIENCE.

THE Association of American Scientists at their last annual meeting in Washington, gave exceedingly interesting reports of the various departments of science directed by the general government and State and literary institutions. Dr. H. W. Wiley, chief of the chemistry bureau stated that the work of his bureau had resulted in the enactment of State laws which saved farmers millions by preventing fraud in the sale of fertilizers. Plant study which gave the farmer information as to how and when to fertilize was one of the great works of the chemistry bureau. From the results of the past 50 years, these scientific studies showed that there would be no danger of exhausting the soil of the country and that our wheat and cereal supply would always be adequate to our growth. Scientific stock feeding which has been demonstrated by the chemist has made it possible for a stock raiser to prepare an animal for the market for ⅓ less than formerly. "And when we get through studying how to feed our pigs, cows, and horses," said Dr. Wiley, "maybe we will turn our attention to the feeding of the human animal." There is no need to feed a man to make him fat unless we want him for food, and I am satisfied we obtain at least ⅓ more for our food than is necessary. Dr. O. L. Howard, chief of the Bureau of Entomology, referred to the great work which had been done by protecting crops from damage by insects. This work it is estimated now saves $300,000,000 a year on our crops and $150,000,000 on the crops of Canada. In persuing these investigations by which such magnificent results are obtained the government is but spending $150,000 for the service. Mr. G. E. Mitchell said in reference to irrigation now so successfully carried on in the West and South "the reclamation of arid America through government construction of irrigation works will furnish in years to come an effective outlet for the industrious surplus population of our cities." The irrigation of the 100,000,000 acres of western plains and valleys will create innumerable small homes of 5, 10, 20 or 30 acres where people live in the open air, till the soil with their hands and yet enjoy the privileges and advantages of the city, will prove the sheet anchor of the republic in any time of national peril and will radiate eastward the same idea of the division of the large into small forms and the utilization of the stream and the pond in making certain and increasing an oftentimes unreliable crop. The magnificent results obtained from the development in every department of science, especially that which pertains to agriculture cannot fail to give us the most optimistic view for the future of this republic now in its infancy but which in progressive development has outstripped every other nation. One great problem which is yet to be worked out is the utilizing the nitrogen of the atmosphere as a fertilizer which we have heretofore been obliged to obtain from other sources but which, obtained by some cheap process from the atmosphere, will prove inexhaustible. The utilizing of our rivers and lakes and the ebb and flow of the tides of the oceans as power producers, will draw from the atmosphere that electric force which will supply the motive power to mills and transportation and furnish us with the heat and light which have hitherto been stored from the rays of the sun, acting and producing the vegetation of a prehistoric age, in the crust of the earth in the coal formation. In all these outlooks of science which crown the closing year and points to possibilities of which the world has hitherto never dreamed, we catch faint glimpses of that regenerated world when a new Eden shall be developed unstained by sin, with no trace of the serpent, in harmony with and one with God.

BLOOD POISONING

THE year 1902 closed with the introduction into our country of a bloodless surgery, which in its success excited the enthusiasm of the profession and the public of the American Continent, and marked a new era in surgery. With the opening of the year 1903 while the pulse of the profession was beating high with the development of á factor in surgery which was bringing to it new triumphs in its relief of what had been considered beyond the reach of surgical skill, the startling fact was announced that an efficient remedy had been discovered for the prevention and cure of septic poisoning, which had hitherto proved so fatal that its presence in active form was considered almost as a death sentence: a remedy so potent in its action, so destructive of septic bacilli and their toxic effect as to bring back the patient to life and health when the vital forces had sunk so low as to be almost in a state of collapse. The brilliant thought of the discoverer had been put into prompt action and the problem worked out not alone in theory but in actual fa t, the shadow of death vanishing before the magic touch of science. On the 25th of December a negro woman was introduced into Bellevue Hospital, suffering from puerperal fever from a childbirth eight days before. The case was in

the obstetrical ward of Dr. Polk in which Dr. Charles C. Barrows was assistant. Dr. Polk said: "We thought the woman would die because we had seen a great many women die under such conditions, in fact, I never saw a case of recovery where the effects of the poison were so marked. We regarded the case as beyond hope." A bacteriological examination of the blood showed the presence of the virulent bacteria of septicemia—surgically known as streptococci. The temperature was rapidly rising as the system became more and more under the influence of the bacteria. At this time when life or death was a question of a few hours, Dr. Barrows requested permission to make an injection of Formalin solution. This preparation, it will be remembered, is a solution of Formaldehyde in water and contains about 40 per cent. of Formaldehyde. It has been largely used as an antiseptic and disinfectant and forms one of the ingredients in some of the preparations for embalming. The action is so powerful as an antiseptic that Dr. Barrows' idea was that if injected into the blood in proper strength and quantity, it might destroy the streptococci and give the patient a chance for life. The thought was almost an inspiration. It was the last weapon against death, and in this case it did not fail. An injection of 500 cubic centimetres of a solution of 1 to 5,000 sterilized water of Formalin into the veins was made. Immediately after the injection the temperature began to fall. The next day it fell to 101°. The second and third day it had risen to 103°. A second bacteriological investigation showed still the presence of streptococci, but fewer and less virulent. Another injection was made and the quantity increased to 750 cubic centimetres. The pulse dropped to normal within a few hours. The next blood examination showed no streptococci and revealed no other symptoms of the disease. The patient made a rapid recovery. Startling as the result of the new and heroic treatment seems to be and so full of future promise, still the case might be an isolated one, the full value of the remedy waiting further experiments. Fortunately another case presented itself within a few days which was taken to the Hahnemann Hospital and still another to St. Vincent's Hospital. The first case similar to the one in Bellevue, the other arising from a different cause, but even more violent and quite as hopeless, both were treated by the same method. The woman admitted to Hahnemann Hospital gave birth to a child several days before and when sent to the hospital by her physician, Dr. J. Oscoe Chase, was considered in a hopeless condition. Her temperature was 104.3° and her pulse 148. Dr. William Francis Honan, the attending surgeon, with the case of Dr. Barrows fresh in his mind, determined to try the Formalin treatment. The Formalin solution was used of the same strength as that of Dr. Barrows, but instead of 500 cubic centimetres, 700, or about 23 fluid ounces, were introduced into one of the large veins of the arm, the operation lasting half an hour. Half an hour after the operation the woman had a chill and her temperature went up. The chill only lasted a few minutes when the temperature rapidly went down. Had it not been for the prompt treatment the woman would have died in a few hours. Under the direction of Dr. Honan frequent blood cultures were made and the condition of the blood especially the white blood corpuscles, and the streptococci, carefully noted. The progress of Dr. Barrows' case and that of Dr. Honan's was watched in every stage along those scientific lines which must be followed in all cases and which can alone reveal the true value of the remedy. Dr. Edward Waitzfelder reports a case in Gouverneur Hospital whom he has successfully treated by Dr. Barrows' method. The case in St. Vincent's Hospital had double pneumonia besides sepsis. The sepsis was caused by a blow on the head. The patient died in a few days. Dr. Baner, the physician, thought the Formalin had no material influence either for good or bad. The case was a complex one in which other factors were involved and which might have proved fatal without the presence of sepsis, and certainly gave no accurate test of the effect of the remedy on the general condition.

Blood poisoning is due, notwithstanding its many phases of manifestation, to the entrance of certain poisonous bacteria into the circulation. The patient dies from septic intoxication due to the toxin secreted by the disease germs. If Formalin can be relied upon to destroy the producing agent of the bacteria and thus enable the leucocytes, those wandering scavengers of the blood, to resume their work, which seems to be the case from the bacteriological examination made at frequent intervals, Dr. Barrows has introduced a treatment which will be the means of saving thousands of lives. Of course the efficiency of this treatment must be substantiated by a large series of cases in different conditions conducted with the utmost fairness and the most scrupulous regard to scientific rules. It may be found that this agent which has already been used to a certain extent in tuberculosis with benefit in the Consumptive Sanitarium at Liberty and in England may be of still further use in destroying the bacteria of other diseases.

THE ENNO SANDER PRIZE.

THIS prize is opened for competition to all persons eligible to active or associate membership in the Association of Military Surgeons of the United States for 1903, and will be awarded to the author of the best paper on the "Differential Diagnosis of Typhoid Fever in its Earliest Stages." The Board of Award will consist of Dr. Austin Flint of New York, Colonel Calvin DeWitt of the Army, Prof. Victor C. Vaughan of Ann Arbor. Full information concerning the contest may be obtained from Major James Evelyn Pilcher, Carlisle, Pa., the Secretary of the Association.

—A female physician, Dr. Rena Mastio, has been appointed to the Professorship of Anatomy at Milan.

THE GENERAL PRACTITIONER.

IT is frequently asserted that the general practitioner is a survival of a stage of medical development that is rapidly being passed. With the nervous system, skin, organs of special sense, genito-urinary apparatus of males and pelvic organs of females, the bony frame-work of the deformed, the digestive apparatus and injured or hopelessly diseased tissues that require the knife, all relegated to specialists, it sometimes seems that there is nothing left for the general practitioner but the navel, and this rarely calls for medical advice. Certainly, if one compares the present number of specialists with that existing thirty years ago, and assumes an equal rate of increase for the future, it is easy to prophesy the extinction of the general practitioner after a generation or two longer.

Such a prophecy, however, rests on the most transparent sophistry. In the first place, all changes necessitated by human development progress, at first slowly, then with increasing rapidity, till the demand is met by the supply and then there follows a period of stability, or, if the supply has exceeded the demand, by an ebb in the opposite direction. In all lines of human activity there is a requirement first for prompt service of a general nature and, secondly, for detailed attention to peculiar conditions.

As an example of the same tendency toward specialism, may be taken the history of retail stores. The general store gave place to one-line businesses but there followed the return to the department store in accordance with the popular demand for convenience. Just at present, we are feeling the effects of over-specialization in skilled labor. The plumber will not touch a gas pipe, and neither the plumber nor the gas-fitter will drive a nail unless he makes us feel our deep obligation to him for his violation of his code of ethics. For the time being, the house-holding public endures the nuisance of absolute separation of trades but it is only a question of time when popular demands will restore the general handy man to his original position of prestige.

General practitioner and specialist alike, make a serious mistake if they consider themselves in opposition to each other. Regarding the matter in the most sordid light possible, every physician is in opposition to every other, especially so long as the medical profession remains in its overcrowded state. There is some little excuse for a feeling of jealousy toward one who has better success than ourselves, particularly if that success is not due to merit. All such jealousy and hostility is, however, contemptible, and a spirit of mutual regard and assistance should be fostered by the influence of all right minded men. It sometimes happens that physicians who would scorn such a spirit directed toward a colleague considered merely as a physician, manifest it publicly regarding those who are susceptible to a different classification from their own. If we are going to be influenced in our professional relations by business rivalry, let us be consistent enough to display our animus toward those whose rivalry affects us most strongly. In other words, let the oculist oppose the oculist, and the general practitioner the general practitioner, not the specialist who competes with him in only one line. As an example of the unreasonable display of intra-professional jealousy, may be mentioned a general practitioner who opposed the election to a hospital staff of a specialist who, so far from being in the position of a business rival, had actually been in the habit of referring to him, such cases as he encountered that did not lie within his specialty. In justice to the generalist, it should be stated that he was not actuated by personal motives but by the conviction that general practice would suffer by acknowledging the existence of specialties, except such as had to be recognized.

Such a spirit of antagonism is only another manifestation of the fear that the days of the generalist are numbered. There is some apparent justification of this feeling when we consider that the various specialties cover the entire field of general practice and overlap one another. But, if there were nothing for the general practitioner to do but answer emergency calls and make the proper allotment of patients to specialists, there would still be a large demand for his services and an average community would support at least as many general practitioners as all of its specialists together. As a matter of fact, no specialist expects to treat all of the cases nominally in his line, but only those that are dangerously acute, obstinately chronic, puzzling in their symptoms or requiring high degrees of instrumental skill or patient treatment. True, the specialist must have some experience in moderate, and what may almost be termed, *normal* manifestations of disease. This, however, he will obtain through such patients as seek his services without having been referred by another physician. The bulk of a specialist's work should reach him through the general practitioner. As any physician's reputation grows, there is a tendency for patients to seek him solely on account of his reputation, but, as a general rule, there is something wrong with a specialist who does not rely largely upon consultation and reference cases. In other words, the very existence of specialism as a branch of regular medical practice means that the general practitioner, as a rule, recognizes its necessity, for, if it were genuinely and generally frowned upon by the latter it could not exist except as a species of quackery, outside the professional pale. Therefore, the general practitioner, who holds in his own hands, the control of the entire situation, should avoid equally two extremes: he should neither allow a form of laziness and cowardice to induce him to refer his patients to a specialist, as a matter of routine and thus reduce general practice to a sort of "first aid to the injured" status, nor, on the other hand, should he adopt the policy of hanging on to cases that really need a specialist's services, till it is a choice between consultation and dismissal. Most specialists, more or less frequently, en-

counter such cases in which the interests of the patient have been jeopardized by an over-enthusiastic or avaricious general practitioner who has conceived it to be his duty to starve out the specialists. Such cases always damage the prestige of the profession as a whole. Usually, the specialist, in such a case, is importuned to take exclusive charge of the patient, and it is equally hard and equally discreditable to be honest with the patient and his friends and to look at the matter from the standpoint of abstract justice and humanity or to lie in the interest of professional ethics and to stand up for the physician who has no sense of ethics beyond his own pocket book. Frequently, indeed, the patient or his family who have been thus outraged, absolutely refuse to retain the former general practitioner. The specialist is then forced to choose between stealing a case that properly belonged to him or refusing to render the aid which the patient and his friends feel that he should. Whichever course is followed, the ethical effect upon the profession is bad and farther reaching than is sometimes realized.

On the other hand, the specialist owes an equal duty to the general practitioner. Some time ago, quite in the capacity of a passer-by and not at all professionally, a colleague assisted an old lady who had fallen and broken her hip. The case was evidently one in which a surgeon should be called. A member of the family suggested that a physician should be summoned who had recently treated her for a cold. It was contended that the case was one demanding expert surgical care. She then mentioned the name of her attendant, that of a prominent surgeon of whose ability there could be no question. Now, the profession has the right to protect itself against this form of specialism, and we hold that there are only three excuses for the acceptance of general practice cases, by a specialist: 1. That, as every specialist should have a preliminary and considerable experience in general practice, there must be a transition period during which he is acquiring a specal practice, while maintaining himself by his general work. This period is of varying length, but it should never be unduly protracted and the decision must be based upon individual circumstances, with regard to the good faith of the specialist and the facilities or obstacles with which his progress toward specialism is attended. 2. It is inevitable that, in small communities, the need of specialism is not balanced by the opportunity to support one's self by a limited practice. 3. In emergent cases or those in which there is reasonable doubt as to diagnosis, it is perfectly proper that the specialist should administer temporary aid. He should, however, not violate principles of good faith by continuing in charge of such cases.

The ideal practitioner, like the ideal specialist, should be pre-eminently, a practical man. Yet, he should never lose sight of the fact that three lines of knowledge, often falsely regarded as theoretical, are absolutely essential to genuine success: he should understand the normal make-up and functions of the body, the exact methods by which disease modifies the normal structure and physiologic processes and the exact ways in which remedial agents act. The cynical definition of a physician as "a man who pours medicines of which he knows little, into a body of which he knows less" has had too much to justify it in the past. It is the duty of the general practitioner, not only to do justice to the cases actually under his care, but to educate the laity to a point at which they can estimate, as well as may be, the qualifications and good faith of the members of the medical profession with whom they may come in contact. It is, of course, only under the most exceptional circumstances, that one is justified in mentioning any particular physician, druggist or hospital, as inefficient or dishonorable, yet, in general terms, the laity should be warned against imperfect technical training and equipment, and should be taught the prominent symptoms of quackery.

In our opinion, the best development of general practice is to be found outside the larger centers of population. This is due to two tendencies which exist in large cities: that which naturally presses a man of signal ability into a concentration of effort in some special line of work—which may still be called general medicine, but which is so shorn of cases in the better established specialties as virtually to be a specialty—and that which leads to a gradual abandonment of practical work in favor of teaching or medical literature. We do not by any means claim that there are not many general practitioners of the highest rank in cities, but we do feel that, proportionately, more men of this distinguished class are to be found in the smaller towns. And, as a rule, this class of men are too modest about their work. Time and time again, the most eminent specialists find their best suggestions anticipated by the country doctor who often fails to appreciate the benefit which he could confer upon the profession by making his views known. Yet, his silence is golden, compared with the loquacity which imposes upon his hearers, matter plagiarized from textbooks or crudely observed and imperfectly studied.

With the advent of more stringent requirements regarding the education and technical training of the medical profession, we look forward to a continued improvement in its members. The greatest financial success and an importance to the community, fully commensurate with that of the specialist, belongs to the general practitioner. When it is fully realized and universally insisted upon, that the specialist shall have served for some years as a general practitioner and that he must have as genuine a calling to a specialty as the ideal physician has to his practice, we shall cease to hear and both will be united by the strongest ties of sympathy of friction between these two branches of the profession and community of interest.

LEMON AND PINEAPPLE JUICE IN DIPHTHERIA.

The juice of the lemon and pineapple diluted have been found most effectual in destroying diphtheria bacillus and as a gargle in sore throat. The pineapple is of special value also in dyspepsia in its aid of digestion.

DISEASES WHICH MAY BE CONFUSED WITH TYPHOID FEVER.

PROBABLY the last conditions which the average practitioner would think could be confused with typhoid fever are syphilis and gonorrhea, and yet, it is known that under certain circumstances both these conditions can simulate typhoid fever surprisingly. For example, at the outset of the second stage of the syphilitic condition there may appear a fever accompanied with prostration and stupor which has all the appearance of the typhoid state. If there is no special skin eruption the diagnosis may be hard to make, for the absence of pain on palpation of the right iliac fossa is not a very reassuring condition. It is possible that there may be no skin manifestations in the syphilitic disease, but it is well to search for papules. A common source for these is the anus. Of course, the other symptoms of syphilis and typhoid must be looked for. Again, we must remember that it is possible for syphilis and typhoid to be coexistent.

There are cases on record where gonorrhea has been mistaken for typhoid fever. These are cases in which there is fever with much depression. If the physician is careful, however, to make an exploration of the urethra such cases will clear up. The danger lies in the fact that the condition may resemble typhoid fever so closely that the physician will not think of examining the urethral state.

It is frequently very difficult to diagnose miliary tuberculosis from typhoid fever, especially that form of tuberculosis in which the thoracic symptoms are slight and there exists a typhoid state with dizziness and prostration. There are present possibly some sibilant and some subcrepitant râles, but these can be heard in typhoid fever. The patient's pulse in tuberculosis is less dicrotic, but this is only a relative symptom and of no especial value. The prodroma of typhoid only lasts for eight to ten days, while the same condition in phthisis of the acute form is much longer, varying from three to six weeks, and yet there may be a period of depression preceding typhoid fever with a history of this kind lasting for some time. If there are no local manifestations of tuberculosis the diagnosis may be extremely difficult, for diarrhea may exist in tuberculosis, the initial bronchitis may be very similar to that of typhoid fever, and there may be blood in the stools and enlargement of the spleen, and reddish spots may develop which may have somewhat the character of the true typhoid eruption, although they do not come out in successive crops. It is in this condition that the Widal test is now probably the most important factor in diagnosis.

When typhoid fever sets in with a chill and is followed by symptoms of pneumonia we are apt to think the case at first pneumonia, but it develops within ten days or so into genuine typhoid fever. Again, the pneumonias of old men are very prone to develop the typhoid state because the kidneys are not capable of eliminating the excrementitious materials following the infectious disease. Osler mentions a case in which he mistook a case of senile pneumonia for typhoid fever and was not aware of the mistake until the autopsy showed the characteristic lesions of typhoid fever.

Potain states that he dòes not think the diagnosis between typhoid fever and pneumonia is as difficult as the text books make it out. He follows the rule that if the patient is over fifty years of age it is not so likely to be typhoid as pneumonia. Again, if you see the case from the outset you will find that pneumonia does not often exist at the commencement of the typhoid.

Another disease with which typhoid fever has been confused a great deal in the last ten years are cases of so-called epidemic influenza. In this condition of the "grippe" there are frequently symptoms very similar to typhoid. The same depression, the same weakness, leading on to prostration are present, while frequently the abdominal symptoms are similar, including swelling of the abdomen and gurgling in the right iliac fossa. As a rule the headache in influenza is very intense at first, and it comes on as a rule with persons who have been quite well up to the time of the attack, while the commencement of typhoid, generally, is a history of loss of health for some time. Again, the rise in temperature in influenza is generally very rapid, reaching 104° almost at the onset, while in typhoid it is more progressive in character. At the same time, there have developed a number of cases in which the disease seems to have begun as influenza and developed into typhoid fever. It is in such cases as these again, where the rosy colored eruption of typhoid is particularly significant and the necessity for trying the Widal test appears. It is especially true in these cases, for enlargement of the spleen, which is one of the most reliable signs of typhoid fever, frequently occurs also in influenza. The text book diagnosticians make a great point of the fact that it is less general in influenza than in typhoid fever, but such a diagnosis as this is a little too hair-splitting for the general practitioner.

Malarial fever has been confused from time to time with typhoid fever, but the old idea of a typho-malarial fever has been thrown into the lumber room of the past. There is no such disease as this, although, of course, typhoid fever and malaria may exist in the same case. It requires, if necessary, an examination of the blood to make a diagnosis between these two conditions, for there may be in malaria no chills, the remissions may be slight and there may be a history of diarrhea, loss of appetite and malaise. The spleen also is enlarged, the tongue furred and the cheeks are flushed.

Angio-colitis and colecystitis have been mistaken from time to time for typhoid fever. There is in the

first condition, febrile movements occurring at night and considerable prostration, but a study of the antecedent history should explain the case. As for colecystitis, the calculus may pass on into the cecum and produce a colitis accompanied with fever and gurgling in the right iliac fossa. Under these circumstances, the symptoms resemble each other enough to make possible a confusion, and indeed, colecystitis may be produced by the typhoid fever.

Again, biliary troubles are now known to be more common than was formerly supposed in young persons. Here, again, the use of the Widal test is necessary.

The old classical typhus fever was formerly confused with typhoid fever, but nowadays this is scarcely possible; in the first place because the disease is so rare and generally epidemic in character when it occurs, and because its symptoms are so different.

Of course, in the typical cases of typhoid fever there is not much trouble to make a diagnosis; it is only in the atypical cases that this trouble exists, but care must be taken even under these circumstances, and in case of doubt it is always well to err on the safe side. Undoubtedly, to those who are in a position to use it, the Widal test is very important in these doubtful cases, but even here there is a certain percentage of error, and undoubtedly there are a certain number of cases in which it is impossible to make a definite diagnosis. Under these circumstances it is always well to treat the case as if it were typhoid fever as long as the symptoms exist.

DANYZ'S RAT-VIRUS: THE EFFORTS OF THE UNITED STATES GOVERNMENT TO DESTROY RATS.

IN line with the general movements of the civilized world to destroy the various forms of vermin, the United States Government, through the medium of its Marine Hospital Service, has taken up the subject of the destruction of rats. This is by no means a trifling undertaking, and it has assumed great importance on account of the spread of the plague throughout the world. From the Middle Ages it has been noticed that there was an unusual mortality among rats during great outbreaks of the plague and it was assumed, even then, that these animals had some part in the spread of the disease. It is now known that the rat is extremely susceptible to plague, sickening and dying in the same manner as man, in fact, it is possible to foretell an epidemic by the great increase in the mortality of rats, for it has been shown that the rats are the first to contract the disease, spreading it afterwards among men. Therefore, the fact that the plague has threatened our country on both sides, and that we are getting into more general contact with tropical countries, has led the Government to take up this important question.

About two years ago, Danyz published in the "Annals of the Pasteur Institute" a method for the destruction of rats by the use of cultures of certain bacilli. He obtained this bacillus from an epidemic among harvest mice, and by the use of long, complicated laboratory methods he succeeded in increasing its virulence so that it became pathogenic for all species of rats. Danyz based his work upon the fact that Loeffler had discovered the year before, the bacillus typhi murium, which he had obtained from an epidemic among white mice and which he employed successfully in the destruction of harvest mice. But, unfortunately, the bacillus isolated by Loeffler was of variable virulence so that it could not be used for the destruction of all species of rodents, therefore, Danyz undertook the work of increasing the virulence of this organism. The manner in which he did this is interesting. He isolated the bacillus from a spontaneous epidemic among harvest mice. This organism was the coccobacillus which presented the characteristics of the colon and resembles the bacillus which had been described by Loeffler. From the outset, this organism showed a slight pathogenicity for gray rats, and Danyz found that out of ten animals which had been fed from cultures of this microbe two or three would die, several others would sicken, but would eventually get well. It seemed to have no effect upon the remainder, but the fact that a certain percentage of the rats always succumbed led him to hope to increase the virulence of this bacillus by passing the microbe from rat to rat. But Danyz found that by doing this he succeeded in enfeebling rather than increasing its virulence so that it was rarely possible to go beyond 10 or 12 passages. After trying other methods, he finally found that by taking the culture of the bacillus which was fatal for mice in four or five days and growing it in bouillon in order to accustom it to an anaerobic existence, he could accomplish better results. He did this by placing the culture in flasks in the incubator until the culture developed and then it was kept at an ordinary temperature until the deposit formed and the bouillon became perfectly clear. This process extended over four or five days, but it accustomed the microbe to an anaerobic existence. He passed the culture then from the flask in a collodion sac which was kept for twenty-four or thirty-six hours, to the abdominal cavity of a rat, and then he planted it in ordinary bouillon and thence again into flasks. From these last flasks the culture was transferred to agar and it was the culture in agar that Danyz gave to the mice to eat after diluting with water, and soaked bread and grain in this dilution. He patiently repeated this operation a number of times until he noted a decided increase in the virulence for mice, where they had formerly died at the end of four or five days, they now died in from one and one-half to two days. As soon as he obtained this increase in the virulence for mice he replaced them with white rats, commencing with young rats. Proceeding thus and making collodion sac culture in the abdominal cavity he was able to specialize the culture and render it virulent in ten passages, so that he produced a culture which

was regularly virulent for both black, gray and white rats. The bouillon which was used by Danyz had been prepared from horse meat with 1 per cent, peptone and a little carbonate of lime to neutralize the acids which formed during the culture and rapidly affected the virulence of the bacillus. The patience and perseverance of this operator is certainly worthy of praise, to keep up this apparently hopeless investigation so long and so successfully.

Rosenau obtained this culture from the Pasteur Institute and began his work by feeding 115 rats in various ways with the virus. Of these forty-six died. He used largely the gray rat, the tame white rat and a few of the wild brown rat. He found that the result depended largely upon the amount of the culture he was able to get the rat to eat, for example, by starving the rats for a day or two and then forcing them to eat and drink the culture he was able to get very brilliant results. In a case of 27 rats which were fed in this way everyone died within a week. But if the amount the rats ate was small the effect was not so certain. In one case he fed 70 rats on four agar tubes with the result that only 7 died. He found that on increasing the dose gradually, at the end of a week they could eat large amounts without any effect so that it was very clear that a large primary dose was fatal, but that unfortunately, a small dose was not only uncertain but actually produced an immunity. Rosenau therefore came to the conclusion that this was a very important factor in the use of the virus, for it was probable that in a wild state rats might not partake of amounts large enough to cause death at once and that subsequently, if they did eat larger amounts they could do so without causing any mortality among them. In this way the virus did not have the effect that a chemical poison would have which does not possess the disadvantage of producing immunity. Again, the virus deteriorated very rapidly on exposure to the light and air, or when it became dry, all of which was very apt to happen if placed out for rats as they exist at large in the world. On the other hand, the virus had the advantage of being harmless for man and domestic animals.

It has been pointed out by Danyz himself that the epidemic produced by this virus in rats is self limited on account of the atenuation and the resistance of the rats. There is no doubt that the disease can be spread from rat to rat by eating each other, but this mode of infection is very variable. Rosenau fed rats upon organs of other rats dead from infection without producing any result whatever. Rats seem to be uncertain in regard to this cannibalistic feature, for sometimes they will eat each other, sometimes they will stubbornly refuse. Rosenau found that when he withheld food for four days rats at times refused to touch the dead bodies, while at other times they were very vicious and not only would eat the dead bodies, but would kill the sick and feeble. Therefore, Rosenau, in his report, has come to the conclusion that this method of rat extermination, while brilliant in its conception and a splendid monument to the perseverance and scientific skill on the part of the French operator, is not destined, as it exists at present, to be of much value in the destruction of this world-wide vermin. He thinks that the field is still open either for work in this direction, or along different lines.

A NEW LABORATORY.

THE Carnegie institution for the propagation of science has appropriated $8,000 for the establishment of a desert laboratory and its support for the year 1903. The purpose of the laboratory is to enable a thorough study to be made of the physilogical features of plants under the unusual conditions to be found in desert regions. Particular attention is to be paid to all relation of water to desert vegetation while light and temperature will also be regarded in the research. The laboratory will accommodate at least 12 investigators at a time and provision will be made whereby scientists from any part of the world may carry on experiments of any problem affecting desert vegetation. When we consider that there are over one million square miles of desert land in the United States, the necessity for this laboratory will be very apparent. This is the second laboratory to be established by the Carnegie institution. The first was provided for some time ago when $40,000 was appropriated for a marine laboratory at Woods Hole, Mass., which is now doing excellent work. It is a matter for congratulation that the enormous fortune accumulated in the legitimate line of business enterprise is being distributed to a certain extent in the establishment of institutions and in the accomplishment of work which contributes so much to the benefit of mankind.

IS APPENDICITIS ON THE INCREASE?

RECENT discoveries show that this disease which now seems so readily on the increase is probably as old as the human race, but like many other diseases, including diphtheria and Bright's disease, have only within the past century been correctly diagnosed.

During recent excavations in Egypt a mummy was unearthed in which it was shown that the cause of death at least two thousand years before was appendicitis. There is no doubt that the disease is in numerous cases like that of many other diseases, is the result of imagination, the patients having worried themselves into the belief of its existence and would not be satisfied until the appendix was removed. We might also say that the operation is frequently performed owing to an error of diagnosis or a desire for a rich fee when entirely unnecessary. It is nevertheless a fact revealed from hospital reports that the disease is actually on the increase. In the reports of St. Thomas', Guy's, and St. Bartholomew's hospitals in 1890 only 38 cases of

appendicitis were treated. Every year since then the number has increased until in the year 1900 there were 382 cases treated at these hospitals. The cases have been increasing proportionately since. Out of these 382 cases 10 only had fatal outcomes showing the great decrease in fatality as the disease is more carefully diagnosed and better understood.

DECREASED DEATH RATE IN NEW YORK.

ERNEST J. Lederle, President of the Board of Health, in his report to the Mayor for the past year, showed that the death rate in the greater City was smaller than ever before. The total number of deaths during the past year was 68,082, against 70,-803 for the year before.

President Lederle has figured out that this is a decrease in the death rate per thousand of 1.28.

The unusual decrease in the number of deaths is attributed to a better sanitary system and to the advanced methods of those in charge of the Health Department.

There were 582 fewer deaths from consumption than the year before.

There is a remarkable showing in the increase in the number of marriages and births. Compared with the preceding year, 4,907 more babies appeared in New York during 1902. The number of marriages increased by 2,653.

In addition to the general death rate we are glad to notice a very marked decrease in that of the foundlings who form a part of the care of the City Charities. The very great mortality of this class who are sent to the Infants' Hospital on Randall's Island directed the attention of the New York Association for Improving the Condition of the Poor to the fact that admission to the hospital was almost equivalent to a death sentence as six out of every 10 died and led them to propose the removal of as large a number as possible to private families who should be paid for their board. The change from hospital to home care was soon apparent. In the first year the children weakened by institutional life, the death rate, although lessened, was still 55.9 per cent. The next years this percentage was reduced successively to 31.1 to 18.9 and to 10.7, a rate actually lower for the foundlings than for all children in Manhattan. Mr. Robert G. Fulton in introducing the report said of the Society and others of a similar character "that the organizers of scientific charity brought into action a civil, social, and moral force of immense power able through its initiative and its influence upon public sentiment to make permanent improvements in the fundamental conditions of social life." Every year shows us more and more the importance of following out distinct lines of hygienic work based upon scientific principles in the improvement of the general health and also in the work of general charity. More reliance upon organized effort in which each case is carefully investigated than in that indiscriminate charity which so often fosters vice, ignorance and crime.

A THEOLOGICAL PRESCRIPTION.

THE learned pastor of the Collegiate Church in this city in his Sunday sermon called his brother pastor of the Unitarian Church, Anti-christ, and intimated that he lied. In view of the tendency of the clergy to call each other hard names which was formerly the case in our profession, that eminent poetic theologian, Ella Wheeler Wilcox, suggests the following prescription as a kind of spiritual sedative:

"Whoever was begotten by pure love,
And came desired and welcome into life,
Is of immaculate conception. He
Whose heart is full of tenderness and truth,
Who loves mankind more than he loves Himself,
And cannot find room in His heart for hate,
May be another Christ. We all may be
The Saviours of the world, if we believe
In the Divinity which dwells in us
And worship it, and nail our grosser selves,
Our tempers, greeds, and our unworthy aims,
Upon the cross—Who giveth love to all,
Pays kindness for unkindness, smiles for frowns,
And lends new courage to each fainting heart,
And strengthens hope and scatters joy abroad,
He, too, is a Redeemer, Son of God."

HEPBURN PURE FOOD BILL.

ONE of the most important actions of the present Congress is the passage of the Pure Food Bill forbidding interstate and foreign commerce in adulterated misbranded foods, beverages, candies, drugs and condiments, and also forbidding the manufacture of such goods in territories where Congress has complete jurisdiction. This bill authorizes the Secretary of Agriculture to fix a standard of food products when advisable and to determine whether unwholesome preservatives, false brands, and the like have been used and makes all adulterated or misbranded articles shipped from one State to another or to a foreign country liable to seizure and confiscation.

COLOR BLINDNESS.

SOME twelve years ago Dr. Brundnell Carter in a lecture delivered before the Royal Institution of Great Britain declared that the condition of color blindness is absolutely incurable and incapable of modification by training or exercise in individual cases. This view has prevailed generally in the profession leading to the rejection of men perfectly competent in every other respect to fill important positions but in which accurate perception of color was absolutely necessary. Recent investigations bring out some new facts of the utmost importance showing that color blindness is capable of modification or prevention if taken at the proper time. A recent number of the *Educational Review* contains an article by Alida S. Williams in which she contends that the defects of vision in color blindness are not the results of retinal imperfections of brain lesion or some mysterious freak of inheritance, but simply of insufficient color training in childhood. This view was tested

by examining in one of the private schools in this city 580 boys whose ages ranged from six to twelve years. These boys had received the careful systematic color training now given in our public schools to children of both sexes and the result was that instead of the twenty-four cases to be expected according to the current belief there was only one, and that yielded to special treatment. The result obtained is of great value, not only with reference to the marine and railway service of the future, where a correct distinction of color is absolutely essential, but as suggesting the important educational question whether there may not be other perceptive weaknesses in adults which might be prevented by the proper training of the senses in the impressionable days of childhood. The step recently adopted of a careful examination of all children in our primary schools every month by skilled oculists is certainly a step in the right direction.

VIOLET LIGHT.

THE effect of the various rays of light in the treatment of disease is shown to extend to an ever increasing number of morbid conditions. The curative results of the X-rays and the Finsen light upon skin diseases and even upon cancer has largely increased the field of investigation with decidedly promising results. In the November 22d issue of the *Scientific American,* Dr. James Weir Jr. gives the physiology of the violet light; he says: "The action of the violet rays must be primarily through stimulation of the vasomotor nerves. The first effect is dynamic in character; there is dilation of the blood vessels with a consequent increased flow of blood. The second effect is chemical in nature; the increased flow of blood incites the blood producing organs to manufacture new blood cells. Consequently the plasma of these cells differs chemically from the plasma of the old cells. There is also increased oxidation and oxygeneration through the lungs. The third effect is purely physiological. Owing to the increased flow of new blood cells to the tissues, cell growth is excited and new tissue is formed. Of course, waste is going on all the time; the violet rays merely act as a tonic in stimulating the organs of the animal economy toward repairment of waste by removing and building up of tissue. These beneficial rays are present in diffused daylight, hence the direct rays of the sun are not absolutely necessary in order to produce their good effects on the animal organism. Direct sunlight is, however, an exceedingly efficacious tonic when used moderately and understandingly; there can be intemperance, however, in the use of every good thing that nature has given us."

It is very evident from the investigation of the past few years that the progressive medicine of the future will be in a measure less in the knife and the therapeutic action of drugs from either the animal or vegetable kingdom and more in utilizing the forces of nature ever present with us in air, heat, cold, and light and the electric spirit which gives light to them all.

THE NOBEL FUND.

NO fund has ever been created calculated to stimulate mental activity to such an extent and produce richer results in different fields of scientific research than that created by Alfred Nobel, a native of Stockholm the inventor of dynamite, by which he realized a large fortune. The annual interest of this trust amounts to $250,000 and is divided into five equal parts and given to five men achieving the most important results in as many different departments of human activity. These departments are physics, chemistry, physiology, medicine, literature, and organized or individual effort toward securing international peace and the reduction of the burdens of militarism. These prizes are open to citizens of all nationalities. This year the prize in physics is divided between Dr. H. A. Lorentz and Dr. P. Zeeman, Dutchmen, both of whom have made important contributions to pure science by their researches, especially in regard to radiation. The prize in chemistry was given to Dr. Emil Fischer of Berlin, and the prize in literature to Prof. Theodore Mommsen, both of whom have rendered services so preëminent that their claim upon this particular recognition will be accepted by the whole world. In medicine the award was made to Major Ronald Ross, Principal of the Liverpool School of Tropical Medicine, whose important discoveries in regard to the dissemination of malaria have attracted wide attention in all parts of the globe. For efforts toward the promotion of internal peace the award goes to Prof. Martens of Russia who played a great part in bringing about the Hague Conference and who has been prominent in several arbitrations especially that which took account of the recent controversy between Great Britian and Venezuela. We hope to see in the award next year the name or names of citizens of the United States.

VITALITY AFFECTED BY COLD.

THE old theory of vitality based upon the maintenance of chemical activity must give way before the facts recently brought out, that vitality may exist after an exposure to cold within 20 degrees of absolute zero; a condition in which ordinary chemical processes must cease. Many varieties of microorganism have been exposed to a temperature of liquid air for six months without any appreciable loss of vitality. Seeds immersed in liquid hydrogen have germinated after exposure to this intensely cold fluid when sown as actively as seeds which have not been so exposed. Typhoid germs bear an intense cold without losing their vitality as was shown in the typhoid epidemic in Jamestown where the excreta of a typhoid patient was thrown upon the ice and on the melting of the ice communicated the poison in drinking water. These facts, Professor Dewar says, bring us face to face with a new and hitherto unobtained condition of living matter, and point to a further insight into the nature of vitality and possibly a fresh means of determining the physiology of the specific disease producing organism.

BIBLIOGRAPHICAL.

DISEASES OF THE PANCREAS AND THEIR SURGICAL TREATMENT. By A. W. Mayo Robson, F.R.C.S., Senior Surgeon, Leeds General Infirmary; Emeritus Professor of Surgery, Yorkshire College, Victoria University, England; and B. G. A. Moynihan, M.S. (Lond.), F.R.S.C., Assistant Surgeon, Leeds General Infirmary; Consulting Surgeon to the Skipton and to the Mirifield Memorial Hospitals, England. Octavo 293 pp., illustrated. Philadelphia and London: W. B. Saunders & Co., 1902, Cloth, $3.00 net.

This work, dealing with the surgical aspect of pancreatic disease, has been written with a two-fold object: to record and to review the work done in the past, and to indicate, so far as possible, the scope and trend of future research. It is only within recent years that any material progress in regard to our knowledge of the functions and diseases of the pancreas has been made, and a work like the present will most certainly be welcomed.

The work besides containing a very commendable exposition of the various diseases and injuries of the pancreas, includes an accurate account of the anatomy, abnormalities, development, and structure of the gland.

BACTERIOLOGICAL TECHNIQUE. A Laboratory Guide for the Medical, Dental and Technical Student. By J. W. H. Eyre, M.D., F.R.S.; Edin., Bacteriologist to Guy's Hospital, and Lecturer on Bacteriology at the Medical and Dental Schools, etc. Octavo 375 pp. with 170 illustrations. Philadelphia and London: W. B. Saunders & Co., 1902. Cloth, $2.50 net.

This book presents, concisely yet clearly, the various methods at present in use for the study of bacteria, and elucidates such points in their life-histories as are debatable or still undetermined. Moreover, it does not encumber the student with the many uncertain methods usually crowded into books of this kind, only those being included that are capable of giving satisfactory results even in the hands of beginners.

The excellent and appropriate terminology of Chester has been adopted throughout.

The illustrations are numerous and practical, the author considering, that a picture, if good, possesses a high educational value.

The work is not intended for the medical and dental student alone, having been designed with the needs of the technical student generally constantly in view.

Of the many laboratory guides and technical manuals constantly being issued, this is, one of the best.

THE AMERICAN TEXT-BOOK OF OBSTETRICS. In two volumes. Edited by Richard C. Norris, M.D.; Art Editor, Robert L. Dickinson, M.D., Second Edition, Thoroughly Revised and Enlarged. Two handsome imperial octavo volumes of about 600 pages each; nearly 600 text-illustrations, and 49 colored and half-tone plates. Per vol.: Cloth, $3.50 net; Sheep or Half Morocco, $4.00 net. Philadelphia: W. B. Saunders & Co., 1902.

This is a work for the student and practitioner alike. It makes clear those departments of obstetrics that are at once so important and usually so obscure to the medical student. The obstetric emergencies, the mechanics of normal and abnormal labor, and the various manipulations, required in obstetric surgery are all described in detail, and elucidated with numerous practical illustrations.

Since the appearance of the first edition many important advances have been made in the science and art of obstetrics. The results of bacteriologic and of chemicobiologic research as applied to the pathology of midwifery; the wider range of surgery in treating many of the complications of pregnancy, labor, and the puerperal period, embrace new problems in obstetrics, some of which have found their place in obstetric practice. In this new edition, therefore, a thorough and critical revision was required, some of the chapters being entirely re-written, and others brought up to date by careful scrutiny. A number of new illustrations have been added, and some that appeared in the first edition have been replaced by others of greater excellence.

By reason of the extensive additions the new edition has been presented in two volumes, for convenience in handling. The work seems to be most commendable.

A TEXT BOOK OF DISEASES OF THE EYE. A Handbook of Ophthalmic Practice for Students and Practitioners. By G. E. De Schweinitz, A.M., M.D., Professor of Ophthalmology in the University of Pennsylvania, etc. Fourth Edition, thoroughly revised. Octavo, 773 pp. with 280 text-illustrations and 6 chromo-lithographic plates. Cloth, $5.00 net; Sheep or Half Morocco, $6.00 net. Philadelphia: W. B. Saunders & Co., 1902.

This book has attained its fourth edition which is sufficient proof of its deserved popularity. Written in the hope that it would prove of service to both students and practitioners, it has more than fulfilled all expectations. The methods of examining the eyes, and the symptoms, diagnosis, and treatment of ocular diseases have received the largest share of attention. The subject matter has been given in greater detail than is customary in books of its scope, doubtless because the author, being a teacher of wide experience, recognized more fully than others, the knowledge requisite for the successful practice of ophthalmic science. In this new edition the text has been thoroughly revised, and many new chapters added. A large number of therapeutic agents comparatively recently introduced, particularly the newer silver salts, are given in conection with the diseases in which they are indicated. The illustrative feature of the work has been greatly enhanced in value by the addition of many new cuts and six full-page chromo-lithograpic plates, all most accurately portraying the pathologic conditions which they represent.

DISEASES OF THE SKIN. Their Symptomatology, Etiology and Diagnosis. With special reference to principles of treatment, including full indications for drug remedies. By Henry M. Dearborn, M.D., Professor of Dermatology, New York Homœopathic Medical College and Hospital. ILLUSTRATED. 834 pages. Price, $5.50. Boericke & Runyon, New York. 1903.

The author in his preface says: "The best methods of studying disease is that which yields the most practical information as to the causes, nature, course and symptoms of a given malady and the therapeutic measures required for its safe and speedy relief or cure. The aim in the following pages has been to furnish the essentials of skin diseases in such form as to be clear and accessible to the student and general practitioner: especially as indicating principles or means of treatment.

Hence etiology, symptomatology and diagnosis are given more prominence than pathology, not because the latter is lacking in interest, but rather that it is of least importance in a work not designed for the use of specialists." The work though written from a homeopathic standpoint showing especially homœopathic treatment, indicates such a wide range of reading of the therapeutics of all schools as to commend itself to the general practitioner. The work will undoubtedly not only take its place as a text-book in the leading homeopathic medical colleges but will be read with interest by progressive physicians of all classes.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Articles on Topics of Interest to Students and Practitioners, by leading members of the medical profession. Edited by Henry W. Cattel A.M., M.D. Vol. III Twelfth Series. Philadelphia: J. B. Lippincott Company, 1902.

This volume like its predecessors, is a mine of valuable information upon important subjects, practically stated by competent up-to-date men, and fully illustrated. There are twenty-nine subjects elaborated, all of which are interesting and instructive. The publishers will furnish prospectus upon application.

THE CENTURY MAGAZINE.

There is no magazine which quite fills the place of the *Century* as an all around family magazine. Through its pages the reader is brought in close touch with the highest and most advanced order of general literature, science, art and fiction. There is no one in the family who will not find something in each number to interest and instruct. The January number touches almost every department of general literature, containing a valuable article on Sugar Trusts, The President and the Trusts, Looking into the Caribbean Craters, The Prologue of the American Revolution, relating to the first half of Arnold's terrible march, Cairo to Khartoum, In an Adirondack Canoe, Paris Pawnshops, and some of the best stories and poems in magazine literature. The January number is a fair specimen of the monthly issues for the year.

A TEXT-BOOK OF CLINICAL MEDICINE, PRINCIPLES OF DIAGNOSIS by Clarence Bartlett, M.D., Professor of Medicine in the Hahnemann Medical College with 245 illustrations including six colored plates, $7. Philadelphia. Boerecke & Tafel. 1903.

In the preparation of this work the author has, instead of including diagnosis and treatment in one volume each diagnostic chapter being followed by appropriate therapeutic remarks, devoted one volume entirely to diagnosis to be followed by one on treatment. This course will make reference and conservative reading easier, each volume being complete in itself. The subjects discussed include the examination of patients: temperature, pulse, respiration, digestive tract, liver, spleen, pancreas, nose, larynx, brachea, bronchia, and lungs, the heart, urine, kidneys, blood, eye and ear; Physical examnation of the respiratory organs; symptoms relating to the external service, involving for the most part alterations in shape and size; cerebral localization of lesions of the spinal cord; X-ray diagnosis.

The general excellence of this work renders an extended review unnecessary. It only requires to be said that in fullness of information, in the accuracy and minutiæ of detail, and the completeness of the diagnostic picture in all its shades, and the importance of each in studying pathological conditions and the causes of disease, it is second to no work which has yet appeared from the medical press. The illustrations and typography are in keeping with the usual excellent work of the publishers.

The *Archives of Pediatrics* (Published by E. B. Treat & Co.) commences its twentieth volume with the January issue. This journal which is the oldest in the English language, devoted to the diseases of infants and children has reached a great popularity with the profession on account of the marked ability with which it has been conducted.

ATLAS AND EPITOME OF HUMAN HISTOLOGY AND MICROSCOPIC ANATOMY. By Privatdocent Dr. J. Sobotta, of Wurzburg. Edited, with additions, by G. Carl Huber, M.D., Junior Professor of Anatomy and Histology, and Director of the Histological Laboratory, University of Michigan, Ann Arbor. With 214 colored figures on 80 plates, 68 text-illustrations, and 248 pages of text. Philadelphia and London: W. B. Saunders & Co., 1903. Cloth, $4.50 net.

This work combines an abundance of well-chosen and most accurate illustrations with a concise text, and in such a manner as to make it both atlas and text-book. The great majority of the illustrations have been made from sections prepared from human tissues, and always from fresh and in every respect normal specimens. The colored lithographic plates have been produced with the aid of over 30 colors, and it is evident that particular care was taken to avoid distortion and assure exactness of magnification. The text is as brief as possible; clearness, however, not being sacrificed to brevity. The editor of the English translation has annotated and altered very freely certain portions of the sections on the adenoid tissues, blood and the blood-forming organs, muscular tissues, special sense organs, and peripheral nerve ditributions, making these parts conform to the latest advances in the study of these tissues. The work will be found useful as an atlas, text-book and book of reference for student and practitioner. We strongly recommend it.

PRACTICAL MEDICAL SERIES OF YEAR BOOKS. Comprising 10 volumes on the year's progress in Medicine and Surgery. Issued monthly. Vol. II. General Surgery. Edited by John B. Murphy, M.D. November 1902. Chicago. The Year Book Publishers. Price $2 and $7.50 for the series.

We have noticed the successive volumes of this series with marked commendation as containing in the full and admirable arrangement of matter the most advanced ideas and new thoughts in every department of our profession during the past year. The publication of the year book in several volumes, each including a separate department renders it very acceptable as a work of reference.

—Gordon (*Phila. Med. Jour.*, July 20, 1901) quotes Baruch in saying that cold water acts as a cold douche to the stomach. He gave a swallow of cold water to a neurasthenic before each meal with the result that the appetite returned at once. This may account for the appetizing effect from drinking the cold spring waters of practically no mineral elements: an effect often attributed to the "unseen medicinal virtues" of the waters.

CORRESPONDENCE.

MEDICAL CONSIDERATIONS.

To the Editors of the MEDICAL TIMES:

1. Hippocrates says that opportunities are fleeting. If so, it is equally true that brevity of articles is equally worthy of consideration and adoption, for such are generally read at sight, and the two or three-paged subject is put aside for future reading, and frequently is never read. Busy M.D.'s will endorse the above statements.

2. According to a statement made in some journal the name of which I can not recall, it would appear as if Medical Ethics so long upheld by us as equal to the Ten Commandments in Christendom, were doomed. If so, it would appear as if iconoclasts were still at work as far as Medical Ethics are concerned. It is a sad day for medicine, especially at this date, when our profession, never since Plato's time, was so venerated, and has before it such a glorious amount of achievements.

"The teeming future glorious with visions of a full success."

We refer our readers to a publication: "Medical Ethics and Cognate Subjects," Chas. P. Sparling & Co., publishers, 13 Isabella St., Toronto, Ontario, Canada, which will dispel the idea that ethics are doomed, which, too, will serve to keep the young or the old M.D. free from personal or public condemnation.

3. The States of New York and Illinois apparently have the best regulations as regards licensing, yet there is so much weakness in some State regulations, that before there shall be regulated a general licensing system, much balancing will have to be done, and as a result many unworthy of the title of *Doctor* will be licensed. The ones who signed the "Declaration of Independence" had not the prescience of their grandsons, and hence the formidable obstacles which now appear.

4. The name "State Board of Health" as applied to Boards of licensing by many States, is, indeed, a misapplied expression. They are totally different as any ordinary observer may notice.

5. Of the several hundred M.D.'s who yearly graduate from Canadian universities, it is safe to state that nearly one-third, if not more, ignore provincial licenses, and seek homes in the United States. Years ago our men went *West*. Now they are going *South*. Canada is proud of them, and the United States is blessed by them. Many of these are of old New England stock—such as is the writer of this article.

6. In Canada we have no joint stock medical colleges that grant M.D. or any medical degree. Such would not be countenanced by our men. Universities, provincial or endowed or long established, are alone considered worthy of giving the Doctorate, and those of the medical profession—our barristers and our clergymen, think the *Doctorate* is being much debased, when farriers, dentists, drug clerks, etc., are given the Doctorate, dollars and cents being considered the incentives for this meritricious bestowal of, and debasing of the title, and is it not true?

7. That joint stock colleges, so called, without State sanction, should exist, such as announce courses in medicine, pharmacy, veterinary science (?), dentistry, etc., is a bewildering query. Is it any wonder that the United States M.D. degree is under a cloud in foreign lands? Rutland, of State St., Chicago, sold M.D. degrees for $15 to $25 duly sanctioned by Wisconsin laws. Many duly licensed have the M.D. Wisconsin Eclectic Medical College. Many years ago a bogus *University* in Baltimore, granted M.D. to many who are now licensed in Ohio and other States.

8. In Chicago there is a so-called medical school or college which calls itself a *university*. It lives, and flourishes. It teaches osteopathy, etc., etc., etc.

9. That the public estimation of our profession is due to our own estimation was well illustrated not long since. When the University of the State of New York asked for names of M.D.'s worthy to be placed in its Temple of Fame, but one was named as worthy among us M.D.'s. Who was to blame for this? Are the names of McDowell, Sims, Morton, etc., forgotten?

10. A study of the licensing system of the Province of Ontario is worth consideration of every State if the respectability of the profession and the Doctorate is worthy of interest.

11. That such delusions as osteopathy, vitopathy, Christian science, etc., and other popular delusions should exist, as necessary, is evident to every patriotic man, for toleration of such saves the Commonwealth much expense, otherwise the *Erratics* would have to be confined in mad houses or other asylums.

SENEX.

THE CLINIQUE.

THE HISTORY AND MANAGEMENT OF RAILWAY SURGERY.

IT has been only recently that there has been any distinction made in the treatment of injuries resulting from railroad accidents, and those due to other causes; and yet military surgery had long been a specialty. It has become a necessity for every railroad corporation to have surgeons in the larger towns and cities through which their roads passed, and yet until the Civil War no railway company had a systematized service. Dr. J. W. Jackson, the first president of the National Association of Railway Surgeons, has given us an excellent history of the growth of railroad surgery.

"My army experience gave me familiarity with the Marine Hospital system of the United States, and it was this familiarity and experience that furnished many of the hints and suggestions that I have since put into practical effect in hospital departments of the Missouri Pacific and Wabash Railway systems. In 1867, as surgeon of the Missouri Pacific system, I first became especially interested in the subject of railway surgery. The frequency of accidents among the employes of the road and the deplorable results, in many cases owing to the lack of comfortable quarters and accommodations and the absence of anything like system or concerted action on the part of employers and employed, first suggested to me the possibility of something like a hospital system, having a recognized connection with the road itself, and especially adapted to the peculiar work on hand. The local nature of my position and the narrow limits of my jurisdiction prevented me, however, from putting any of my theories into practical operation until the year 1872, when I became chief surgeon of the Atlantic and Pacific Company, extending from Pacific, Mo., to Vinita, Ind. Ter., and from St. Louis to Atchison, Kans. It was on this line that Dr. Jackson's first railway hospital was established.

It was at first a crude affair, the whole equipment consisting of two beds in the back room of Jackson's office with the apparatus required for private practice.

Then was introduced the feature of appointing local surgeons along the line of our road, who looked after the employes who were seriously injured near their several stations, and took care of them at boarding houses, section houses, and hotels. It is stated that the success of this first venture was not very brilliant; for a large majority of those employes who were so seriously injured as to require amputations died for want of proper care and nursing. Moreover, the bills for services, professional and otherwise, not being subject to inspection, became enormous; consequently, the road was compelled to pay extravagantly for beddings, carpets, furniture, and even the paper on the walls of hotels, which was claimed to be ruined by surgical operations. As a result, the company refused to pay many of these bills, and then both sides of the controversy made the surgical department the target of its complaint. The surgeon found that his position degenerated into auditing small accounts and chasing up elusive details. Few were cured, while none were satisfied. The necessity of union in the operating and supply departments of the system and of a general supervision and inspection of the accounts of the department by the financial officers of the road was clearly seen. The first trial was instructive, if nothing more. In 1873 Dr. Jackson proposed to organize a hospital upon the plan of the United States Marine Hospital Department; but the company did not readily fall in with the plan. In the spring of 1879, the Central Pacific Railroad had a hospital department, with headquarters at Sacramento, Cal., which was supported by assessments upon its employes. In this year the general superintendent issued circulars notifying all employes that on and after July 1, 1879, a deduction of 50 cents per month would be made upon the pay roll from the salary of each employe for the purpose of maintaining a hospital. Then came the storm, for as was expected, great opposition was developed, and not only from employes, but from newspapers along the line of the road, some of them even claiming that we were organizing a gigantic steal.

This misrepresentation was continuous until the public understood the purpose of the hospital department and its management. They learned that it would be conducted in as systematic a manner as any department connected with the operation of a railroad; that the deductions would be made upon the pay roll by the company through its auditor, and the amount thus collected paid over to the company's treasurer; that the chief surgeon's salary and that of his assistants and hospital attendants would be paid exactly as in the case of all other officers and employes of the company, and that all necessary articles and supplies would be purchased by the superintendent of supplies of the hospital department, upon the requisition of the chief surgeon, approved by the general superintendent; that all vouchers would be made by the chief surgeon, and would then be sent to and approved by the general superintendent, thus leaving no room for peculation or fraud. No deduction was made without thirty days' notice of our intention, and any who objected had ample time to secure other employment before the trial was made. They rented a large hotel at Washington, Mo., on the line of the Missouri Pacific Railway, and furnished it comfortably and neatly, and were ready for the reception of patients at the appointed time. During the first month our hospital was filled, many of the inmates being among the former most vigorous opponents of the system. The management and equipment, at first new and unsatisfactory, constantly improved with experience, and the patronage increased proportionately. The number of patients treated during the first year greatly exceeded all anticipation, and went far toward establishing the system upon a firm footing.

The Missouri Pacific system began to spread until the Central Branch of the Union Pacific Railway, the Missouri, Kansas and Texas, the International and Great Northern, and the Texas and Pacific railways were successfully added to or controlled by it and the jurisdiction of the hospital department was correspondingly extended. This necessitated the removal of the main hospital to Sedalia and the building of a new hospital at Fort Worth, Tex. It is a noteworthy fact that the employes of these newly acquired roads had heard so much and so favorably of this hospital department that they accepted its introduction among them with eagerness.

At times the originators met with very stubborn resistance east of the river, the State of Indiana, by its Legislature, even going so far as to pass an act prohibiting railroad corporations from assessing their employes for the maintenance of hospitals. Fortunately, the act was imperfectly drawn, and became a dead letter in consequence. An attempt was made to pass a similar act in Illinois; but failed and latterly there has been no tendency toward restrictive legislation of this nature. In short, the hospital system is now very popular, with both employes and citizens familiar with its workings.

To Drs. Jackson and Outten belongs the honor of being the pioneer chief surgeons who organized and successfully maintained the railway hospital plan, the former being the chief surgeon of the Wabash Railway at the time of his death, which occurred March 13, 1890, and the latter being the chief surgeon of the Missouri Pacific Railway Company. The Union Pacific, with Dr. J. W. Galbraith as its chief surgeon, who is also president of the National Association of Railway Surgeons, is operating the hospital plan, and has some very excellent hospitals. The Atchison, Topeka and Santa Fe Railway Company also operates the hospital plan, while there are other companies now operating under this plan, and no doubt many others will adopt it at an early date. The Baltimore and Ohio Railroad Company was the first to adopt the relief department; that is, by making an assessment each month and deducting the amount from the wages of each employe, they provide a fund. The Pennsylvania Company has adopted this plan and has found it very successful, and it has accomplished very much in relieving those who have been unable for any period, either on account of sickness or injury, to labor and secure the regular wages, while lately they have adopted a pension system for old age. Other railway companies are to adopt this plan of providing for their employes.

In order to make the relief department entirely satisfactory, a hospital plan should also be carried out, having the relief and the treatment of the sick and injured united. There are some of the great railway systems that have local surgeons, without any chief to direct in the affairs of the surgical service, but most of the railroad corporations of this and all other countries recognize the necessity of having especially adapted surgeons. There are many things for which the railroad surgeon must be especially prepared; for example, nearly all his cases will show evidences of shock. Here Dercum has recommended as follows:

If the surgeon is about to perform a serious operation, say trephining of the spinal canal with possible opening of the dura, a preliminary rest of several days in bed should be prescribed, to diminish general nervousness and irritability; secondly, excessive care should be

used in the administration of ether, the very least possible amount being given; thirdly, etherization being complete, one-twentieth to one-tenth of a grain of strychnia should be injected hypodermatically, and repeated if necessary; fourthly, the operation being complete, and the shock established, the patient is to be at once transferred to a previously prepared hot-water bed, the head being maintained a little lower than the body. Shock continuing unabated, digitalis and atropia are next to be used hypodermatically, and at the same time musk may be injected into the bowel in the dose of fifteen to twenty grains, suspended in mucilage. If the latter is not to be obtained, warm, strong, black coffee is to be used in its stead.

The hypodermatic injection of ether he does not believe to possess much utility. If it acts at all, it must be in a reflex way by the local irritation it produces.

The problem of shock must always attract the railway surgeon, for chief among the conditions is enumerated the fact that the patient has added often to the physical injury a nervous, or possibly more correctly speaking, a mental shock, and this latter form of shock finds its highest form of expression in an accident where the injured, through the sense of sight, was conscious for some moments at least of the approaching danger. This might most appropriately be illustrated by the brakeman with the foot caught in the frog of the rail while making a flying switch, totally unable to extricate himself, the car detached from the engine and under good speed, rendering escape impossible; so that the mental condition adds most markedly to the fatality of the injury, because experience has proven that injuries occurring at night, when the injured has not been able to fully comprehend by the use of all the senses that can be brought to bear, have been less fatal and accompanied by a far less serious state of shock. A day-light accident adds greatly to the horrors as well as to the fatalities. However new and unworthy this idea may seem to some, it is and has been recognized by many railway surgeons of extended experience for years.

This subject is worthy of more attention.

There are many other problems: for example, the necessity of an early recognition of approaching death. Colliquative diarrhea with muscular relaxation comes on later, and is a less important sign, needing corroboration by other signs, such as epistaxis or hemorrhagic alvine discharges, as in typhoid fever, or purpuric spots, as in the malignant forms of the exanthemata. Shrunken retinal arteries and a pallid disk are more important. An abnormal appetite may be noted in the last stages of phthisis, in low fevers, and in cerebral complications. It may be interpreted as an intuitive desire to overcome the sense of extreme exhaustion. Optic delusions, such as picking at the bedclothes, extreme muscular prostration, and subsultus tendinum, are most unfavorable signs, and the dilated, glazed eye, and the relaxed smile are still later signs of the approaching end.

An intermittent pulse is nearly always an alarming symptom, especially when it occurs in a debilitated case. The writer has in more than one instance, as in cancer and in consumption, known it to be a virtual herald a fortnight before the occurrence of death. In all dubious cases the sphygmograph might prove of great prognostic value. After the intermittent pulse may appear many quite obvious signs, such as an ashy tint of the face, purple-hued nails, the distinctive white lines around the orbioularis oris seen in serious forms of scarlatina, the whispering voice, pleading look, and grunting respiration. All these are signs of a hindered circulation. Subsultus tendinum, hiccough and convulsions, which appear later, are manifestations of the disordered nervous system.

Left unilateral dropsy beginning in the foot is a very valuable sign of the gradually approaching end. Conjoined with this may be noticed a coolness of the ears, tip of the nose, and malar regions; to be followed, much later, by coldness of the patellar surfaces. These symptoms may come and go for weeks at irregular intervals, but are ominous of evil. The state of the temperature is a matter of importance. A temperature of 105° F., long maintained, renders the prognosis unfavorable with but little qualification. On the other hand, a temperature below 95° is usually quoted as being very serious.

Coma is to be regarded as among the surest signs of approaching death. A rate of respiration thrice the normal, and continuous, also renders an unfavorable prognosis the rule; the only exception, and that a partial one, being in uremic asthma. Cheyne-Stokes respiration, like uremic asthma and the exhilaration of uremic poisoning, may exhibit itself at short intervals.

Of all the signs of dissolution a persistent up-and-down movement of the *pomum Adami*, as temporarily seen in the act of swallowing, is the most valuable. It appears very early in certain forms of the dissolutive state, usually in the period of tracheal râles. In phthisis it may precede the catastrophe even a fortnight or longer. When appearing in diphtheritic croup neither tracheotomy nor intubation is available; this statement having the force of a rule. This sign has been used with success in distinguishing between drunkenness and compression of the brain, being always absent in the former, and present in the moribund condition.

A New Anesthetic.—A local anesthetic has been recently obtained by a Hungarian dentist from an Indian plant called "basu-basu," to which has been given the name Nervocidine. A $^1/_{20}$-per-cent. solution of the salt applied to the human conjunctiva after 20 minutes produced anesthesia of the cornea lasting for 5 hours. A $^1/_{10}$-per-cent. solution brushed over the mucous membrane of the cheek caused anesthesia of the face and tongue, accompanied also by loss of the sensation of taste and the perception of heat and cold. The general action of Nervocidine on the system was that of a poison-producing death by paralysis of the motor centers of the nervous system and of the peripheric nerves. All the experiments proved that Nervocidine was a powerful local anethetic which had the advantage of producing a much more sustained action than cocaine, for the effect of a ½ or ⅕-per-cent. solution might last two or three days. It is, however, not without its drawbacks, such as the local irrigation to which it gives rise, the slow production of the anesthetic state (from 10 to 20 minutes being required) and a liability to the occurrence of nausea, vomiting, salivation and other symptoms of general poisoning.

ADDISON'S DISEASE CURED BY SUPRARENAL EXTRACT.

The *Montreal Medical Journal* quotes a case of Addison's disease in an advanced stage in which various remedies had proved ineffectual as entirely cured by suprarenal extract in 3 gr. doses after each meal. The improvement began immediately and progressed rapidly until recovery.

COFFEE AND MALARIA.

Dr. L. Restrepo of Medellin, Colombia, S. A., about a year ago announced that he had discovered in the husk of the ordinary coffee bean a drug which was even more

powerful in its curative effects on malaria than is quinine. Further experiments seem to at any rate partially justify Dr. Restrepo's claims. His method of preparing and administering the drug is as follows: 45 grammes of coffee beans, including the husk, or 30 grammes of the husk alone, is crushed and boiled in 14 fluid ounces of water for five minutes the resulting fluid extract is divided into six doses, which are all taken during one day.

Several cases of malaria, given up by other physicians as hopeless, have been cured by Dr. Restrepo.

MALARIA AND TYPHOID.

DR. O. L. HOWARD, chief entomologist of the Department of Agriculture, has prepared in the form of a formal bulletin a clear description of the manner in which insects transmit disease and of the preventive measures which lie within the reach of every American agriculturist. This bulletin is entitled "How Insects Affect Health in Rural Districts," and can be had for the asking. Although we do not believe all the conclusions of the author are clearly proved, the bulletin is filled with valuable information about malaria and typhoid fever for urbanite and suburbanite alike, and will undoubtedly prove one of the most practical and valuable publications issued by this department. The discovery that yellow fever is transmitted by the bites of a certain class of mosquitoes and flies, which has been demonstrated in Cuba during the last few months, will soon change all methods of quarantine in the United States. It seems certain that in the future the Gulf States will no longer dread the disease or remain subject to the great vital or economic loss to which they have been subject from occasional outbreaks of yellow fever during past generations. The cause of yellow fever has always been a mystery and indeed is a mystery to-day, in a measure, since, although undoubtedly a disease of parasitic origin, the parasitic organism itself has not yet been discovered.

GLEANINGS.

TUBERCULAR HOSPITAL.

THE Board of Managers of the New Jersey State Sanitarium for tubercular diseases have purchased a tract of about five hundred acres of land near Glen Gardner in Hunterdon County as a site for a State home for consumptives. At Glen Gardner the air is perfectly pure, the soil is dry and porous, and the selected tract lies 950 feet above tide water.

CREMATORIES.

THE first crematory in the United States was established in Washington, Pa., in 1876. In spite of prejudice of custom, cremation is making such rapid headway that there are now 200 crematories scattered over the country from the Atlantic to the Pacific. In New York the Fresh Pond Crematory was built in 1885, and during that year only eight bodies were incinerated. Last year the incinerations numbered 654. Among the clergy of every denomination, especially in the Episcopal church, who favor this disposal of the dead may be mentioned Bishop Potter, Bishop Lawrence, Rev. Dr. Rainsford, Dean Hodges and Rev. Wm. R. Huntington. Some of the more advanced of the Catholic clergy also favor cremation.

A NEW CAUSE OF EPILEPSY.

It is stated that the enormous number of cases of epilepsy in the soldiers of South Africa and those who have returned amounting to over 2,000 were caused, not by wounds or any physical injury but by the harsh screaming detonation of modern firearms particularly repeating cannon and by the explosion of Lyddite shells.

AN INSTITUTION FOR THE STUDY OF TUBERCULOSIS.

Henry Phipps of New York, once a partner of Andrew Carnegie, will establish an institute for the study, treatment and prevention of tuberculosis, and will endow it with $1,000,000 or more. It will be named the Henry Phipps Institute, and will be located in the centre of the city among the poor, if a suitable site can be obtained, where it will be easily accessible, and where the best scientific talent can be obtained for the various positions in the institute.

Dr. Lawrence Flick, who has devoted himself for many years to the amelioration of consumption, and who is one of the foremost authorities on this disease in this country, and perhaps in the world, will be the director of the institute.

Pending the preparation of the plans for the institute and the purchase of the site, temporary quarters will be rented by Dr. Flick and the work in connection therewith will be begun possibly before the end of the month. All money needed will be furnished by Mr. Phipps.

The institute will be made the centre of the distribution of knowledge as to the treatment or prevention of tuberculosis in this country. The fundamental purpose of Mr. Phipps in establishing the institute is to stamp out tuberculosis. The institute will be modeled somewhat on the Pasteur Institute of Paris, but will be devoted exclusively to the study and treatment of consumption. It will consist of an administration building containing every device known to science for the study and treatment of tuberculosis. There will be pavilions with a capacity of 100 beds for the treatment of advanced cases. These cases will furnish the clinical material for the study of the disease and its treatment.

There will be also a dispensary for the treatment of walking cases of consumption, modeled upon Emile Roux's dispensary at Lille, France, of which Dr. Calmette is the director. Assistance will be given from this dispensary to the consumptive poor in their homes, and a supervision will be kept over them for the purpose of instructing them in the methods of combating the disease, their homes will be disinfected whenever necessary, and the clothing of the extremely poor will be disinfected and washed. They will be even supplied with food of the proper kind whenever this is necessary.

Lectures will be given and conferences held. Preliminary arrangements have been made already to have the International Congress on Tuberculosis meet under the auspices of the institute in 1905. The Congress met in Berlin last year. It will meet in Paris next year.

The institute will be an entirely independent charity. The buildings will cost probably between $200,000 and $300,000, and the endowment will be $1,000,000 or more to yield an income of about $40,000 a year for the institute's maintenance.

—Dr. Stowall, in *Med. Rev.*, states that hypodermics are rendered less painful and more readily absorbed by dissolving the tablet in a saline solution instead of water alone.

MISCELLANY.

—Muriatic acid curdles milk better than rennet, and preserves it from mites.

—A rickety head is flat on top, with enlargement of the parietal bosses, whereas a hydrocephalic head is spherical.

—Fat Esquimaux babies, when they die, are fried out by their afflicted parents for oil. Thus ever is human misery made light of.

—Malarial infection by a certain mosquito variety, was spoken of nearly 2,000 years ago, by the Roman writers, Varro and Columella.

—Mrs. Geneva Taylor, thirty-six years old, the wife of a poor West Virginia farmer, has just given birth to her third set of triplets in three years. All are alive.

—It is stated that Johns Hopkins Hospital uses no drugs in the treatment of typhoid fever, and yet has a larger percentage of cures than any other hospital in the country.

—It is stated that in order to stop the degeneration of European royal families over whom he has jurisdiction the Pope will hereafter grant no more dispensations for consanguineous marriages.

—M. Eykman, of Amsterdam, has published a method of X-ray photography by which the movements of the pharynx and larynx are shown. To get a distinct picture the movements had to be repeated 120 to 130 times.

—Professional sectarianism in Indiana is officially a thing of the past. The forthcoming report of the medical board of that State will not indicate the classification of schools, but only certify as to the qualification of the applicant.

—The grape fruit is said to have in smaller degree the properties of quinine, and will actually allay inflammation and break up malarial disorders if taken in time. It acts directly on the liver and possesses mild purgative properties.

—Sheep milk has been studied by Mr. Trillat and Forestier, who find that its weight in extracts exceeds the best cow's milk in the proportion of 200 grams per litre to 160 or 165; also, that it surpasses in fat, casein and mineral matter.

—A bulletin of the Tokyo Agricultural College states that the color of green tea is not caused by copper salts necessarily, but is due to the fact that green tea is made from leaves dried as soon as they are picked, while black tea is first allowed to ferment.

—Bits of human skin removed from the body will live from two to ten days. This is the startling fact announced lately by Dr. Waller, an English surgeon, in a communication read before the Royal Society on the Electrical Phenomena of Human Skin.

—A man who recently presented himself at a hospital in Paris for treatment was found to have turned his right thigh into a veritable pincushion. Hundreds of pins had been driven up to the head in his flesh. His mind had become unhinged by excessive use of alcohol.

—A writer in the *Medical Record*, commenting upon castration for enlarged prostate, says he injected cocain into the testicles twice a week, for two months, in two cases of this kind. In both, while the power of copulation remained intact, there was absolute cessation of the production of spermatozoa.

—The appointment of Dr. Johannes Orth, Professor of Pathological Anatomy at the University of Goettingen, as successor to the late Dr. Virchow in the chair of Pathological Anatomy and as Director of the Pathological Institute, in the University of Berlin, was announced September 25. Dr. Orth was for many years Virchow's assistant.

—Several interesting cases of hysteria in animals are related by M. Lepinay, a French veterinary surgeon, quoted in *Philadelphia Medical Journal*. One of them referred to a canary bird which, while singing in its cage, was frightened by a prowling cat. Complete aphonia resulted and lasted for six weeks. The hysterical stigma then disappeared suddenly, just as in the human subject, and the bird resumed its singing.

—M. de Tera, general director of the German railroads, has announced that an embargo will be placed on all employes on the railroads who are not total abstainers, and all such persons will be discharged at the earliest possible moment. Others who are abstainers will be favored and promoted at every opportunity. It is the intention of the director to drive out all moderate drinkers from the service.

—Dr. K. Preisich and Dr. A. Schuetz (*Berl. Klin. Woch.*, May 19) examined the dirt under the fingernails of sixty-six children and found tubercle bacilli in fourteen. n five of these cases, there was no tuberculosis in the family. The anthors insist upon the importance of keeping the hands and nails of infants and children clean, especially when there is tuberculosis in the parents or relatives. Infection becomes easy by reason of the constant sticking of the fingers in the mouth.

—While the "Kaiser Wilhelm Der Grosse" was making her way to the port of New York recently, one of the passengers was taken ill with symptoms of appendicitis. An operation was indicated, but as land was so near, it was deemed advisable to wait until the ship arrrived. Accordingly, a wireless message was sent while the boat was till fifty miles away, and in response to the call an ambulance was in waiting when the pier was reached. The patient, a son of former Prime Minister Di Rudini of Italy, was taken to a hospital, operated upon, and is now convalescent.

—A writer in the *Lancet*, referring to the prevalence of smallpox in London, and the difficulty sometimes in mild cases of differentiating between this disease and chickenpox, calls attention to a well-known method by which the object can be attained. The vesicles in chickenpox are unilocular, while in smallpox they are multilocular, the practical result of this pathological fact being that, if a chickenpox vesicle be pricked with a needle, its contents can be completely evacuated, and the cell will collapse; whereas in smallpox, if you make twenty pricks with a needle, the vesicle will not collapse, because, being multilocular, it is impossible to empty it.

—In view of the incontestable toxic properties of antidiphtheritic serum it is not surprising that its use is signalized by accidents, local or general erythemas, suppuration, peripheral edemas, etc. These troubles, often accompanied by more or less alarming general symptoms, particularly by cardiac collapse, may be delayed for several days, even to the end of the second week. Somers (Selby, England) reports cases in which syncope followed the injection of antidiphtheritic serum at the end of two hours. This is confirmed by A. M. Saward (London), in two cases which were very alarming, and in which the patients were revived with great difficulty.

ORIGINAL ARTICLES.

GENERATION AND THE LAW OF SEX.

BY WM. MORE DECKER, M.D., BUFFALO, N. Y.

PART I.

"GOD moves in a mysterious way, His wonders to perform;" and man, the most God-like of all created life, seeks to unravel the mysteries. Thus man acquires knowledge, revelation, truth, and thus he comes to know God.

All through nature, creation, life, there is evidence of intelligence, design, adaptation, fitness. And nowhere is this intelligence more manifest, than in the great diversity in design, to meet the great—the almost endless, diversity in life, that life may fit the environment, and environment the life, that life may be adapted to the food, and food to the life, and that one life may be socially and organically adapted and fitted to another life, to the end, that generation may take place, and life be perpetuated.

Nothing captivates the mind of man more than this intelligence—the intelligence that runs through Nature. Let us regard the universe as a great kindergarten, full of object lessons, for the children of men. As to the origin of these objects we know very little. The origin of both matter and life are mysterious. What we do know concerning creation may be summed up in one word—evolution.

Life was created, but we know not how. Life is perpetuated by generation. Generation is reproduction of life from life; and this is, also, more or less, mysterious, still we know much more about generation than we do of creation.

Let me affirm at the outset, that I am not going to follow the well-beaten paths of those who discourse on biology and zoology, but will pursue a course of my own selection, in regions that are more or less unexplored, and shall be free to draw upon authors for such information as will suit my line of reasoning; and that you may have no difficulty in following me, I hasten to announce, that the keynote of my philosophy is along the line of opposites. Scientific writers have given us evolution by similars, but evolution is not only by similars, but by opposites; and opposites, because of unlikeness and seeming contradiction, also apparent opposition, have been largely ignored and passed over, without the attention they deserve. Here is a prolific field, for research, yet to be explored.

The Psalmist says—"Oh, that I had the wings of a dove, that I might fly away and be at rest." But the emotion that swells my soul is—"Oh, that I had the wealth of Carnegie, that I might employ the most able minds, the world has produced, and put them to work on original research."

I would have them write biologies and zoologies in an original way. I would bring out in a clear way, the exceptions, the reverse, the opposites, in life.

In the universe, on this terrestrial sphere, we have our day and night; we have spring and fall; summer and winter; heat and cold; fluids and solids; that which is positive, and that which is negative; affinity and disaffinity. This list enumerates a few of the opposites, that exist in the universe.

In life we find the exception, the reverse, the opposite, as common as in the inorganic world. Zoologists classify life along the lines of similars, but they should not be content with this classification. Whatever group of life we consider, there is always somewhere the reverse, the opposite, the exception, to that form of life. For example, in vegetation the rule is for plants to develop from the soil, but the class of orchids is the exception, the reverse, the opposite. They live on the air, and are not rooted in the soil.

Again, the rule among flowering plants, is to bloom in the sunlight, but there are flowering plants, that are the opposite, the reverse to this plan, namely, the night-blooming cactus, the night jasmine, and others, that bloom only at night.

The night-jasmine is a native of East India. There is only one species (Nyctanthes Arbor-tristis). The flowers are white, with a golden throat, open only at night, and load the air with an exquisite perfume near the close of the rainy season.

In the Animal Kingdom the rule of locomotion is to move forward, but we find a life, whose locomotion is in the reverse, the opposite way, namely, the crab. He walks backward.

The rule among animal life is to walk right side up, but the normal method of locomotion in the larvæ of the floral-beetle is upside down. They move on their backs, with their feet up.

Among the vertebrate animals, those that live constantly in the water, such as marine and fresh water fishes, are cold blooded; and their offspring is generated from spawn, which this class of animals deposit in a proper environment. In other words, they lay eggs, they do not bring forth their young alive. There is a wonderful exception in vertebrate life to this rule. I refer to the whale. He lives constantly in water, and propels himself much the same as fishes, but he belongs to another group of animals, namely, the class of mammals, which have blood opposite in character to the fishes, namely, warm blood, and they bring forth their young alive, and nurse them the same as all other mammalia.

The whale is, also, opposite to the fish, in that he must inhale oxygen direct from the atmosphere, whereas fishes, many of them, require little, or no oxygen, at least no more than is found in the water. The whale is an exception to his own class of life. The mammals are usually four-footed, land animals.

Let us turn to bird life. In this class of life the rule is for feathers and wings, but there are birds that have no wings, and there are birds that have more hair than feathers. Here we meet the opposite, the reverse, in life. For example, the Apteryx of Australia, and the Penguin. The latter has arms in place of wings, which serve him as paddles in the water.

The rule is, that all vertebrate animals, that fly, have feathers, and are oviparous, that is, they lay eggs, but there is an exception, a reverse, an opposite, found in vertebrate life to the general plan, namely, the bat. The bat has wings and flies, but is covered with hair, instead of feathers.

Again, the bat, because of his wings and bird-like movements, should be oviparous, but he lays no eggs, on the contrary, brings forth his young alive. He is a mammal.

Birds, as a class, lay eggs, have feathers and wings, and roost when they sleep, but there is an animal, that is a vertebrate, has wings and flies, but roosts in the opposite way to the bird, that is, below the branch, instead of above it, or under the object to which they cling, namely, again the bat.

In life, the organ of sight, the eye, was created for light, but we find animals with eyes created for darkness. Here again we have the reverse, the opposite, for example, the owl, night-heron, the beetle, cock-roaches, and various other kinds of life.

Among waterbugs the rule is to navigate the water, swimming, or propelling themselves on their belly, but there is an exception among these aquatic forms of life. For example, the Notonectæ (waterboatman) navigates the water upon his back.

Most living forms, after they are able to live independent of parental life, obtain nourishment, and maintain their vitality, independent of products, or assistance from other life. But parasitic life is an exception to this rule. In both the Animal and Vegetable Kingdom, there are distinct forms of life, which subsist on what they appropriate from other lives. The parasitic plants are not rooted in the soil. They are rooted in another life, entirely unlike their own; and the parasitic animals are always dependent on what they derive from other unlike life, either vegetable, or animal. You see, therefore, here again we meet the reverse, the opposite, in life.

Nearly all forms of animal life have a period of rest, repose, known as sleep, but the period of sleep is of brief duration, and the animal does not abstain from food long. He takes on food with more, or less regularity; and the same is true in some forms of vegetable life. But there are creatures that represent remarkable exceptions to this rule. For example, the hibernating animals, that abstain from food for protracted periods. Their functional activities are largely arrested, or more or less completely suspended, for long periods, without destruction of vitality. They go through their comatose state of starvation, and live again as completely as though there had been no protracted check to their organic functions.

Thus I might go on indefinitely, all through zoology, all through life, calling attention to the opposite, the reverse life. There is not a class of life anywhere, but what another life can be found that is opposite in form, or that functionates and acts more or less completely in the reverse, the opposite order.

From the foregoing it is evident, that there is great variation in life, but variation in life is due largely to variation in generation. Spontaneous generation, once believed by naturalists, has been abandoned. Whatever form of life we consider presupposes and necessitates the existence of some other life. Generation proceeds from individuals, and as individuals and generation vary, so the life, or lives evolved vary. Generation operates on a marvelously unique plan. It requires two opposite lives to reproduce a life, and the life that is reproduced is an organically opposite life, to the organic life of one of the parents.

The genesis of all vertebrate animals is sexual. There must be a female life, and there must be a male life, and the female life is organically the opposite of the male life, and the progeny from the sexual blending of the two lives produces a life, which is sexually opposite to one of the parents.

Sexual genesis is, also, universal in that class of life known as invertebrates; also universal among the higher Crustacea; extremely general among insects, and universal among the higher Mollusca. The one exception to sexual genesis exists only in animals of extreme inferiority; however, in them there is dual and opposite genesis, if not sexual genesis.

So universal is sexual genesis in the various forms of life, that it, also, exists, to a greater, or less degree, in microscopical life. Who can tell just where it ends under the microscope?

In the Vegetable Kingdom, according to Spencer, there appear to be no exceptional cases to sexual genesis, save those of a few aberrant parasites, like the Rafflesiaceæ.

Biologists describe a form of genesis among plants, which is not always sexual, but which could not exist without the occasional recurrence of sexual genesis. In this form of genesis, generation begins by the combination of male and female individuals, but the first generation is sexless, and from this life there springs another life, which is sexless, and reproduction goes on producing one individual after another, until finally sexual individuals are formed. In some forms of life this variation in generation alternates, one generation being sexual, the next generation not. One generation is, therefore, the opposite, the reverse, of the other. In some species, the sexless generation continues on through a series of generations, that are sexless, but finally produces a generation with sexual organs. Biologists affirm, that this sort of generation would not be possible, were it not for sexual individuals.

Naturalists recognize another form of generation, which they term true parthenogenesis, that is, life produced from a virgin. In this kind of genesis, reproduction of plants, or animals, occurs independent of the male sex. But this sort of genesis is contrary to all known processes of reproduction; and I believe, eventually, this sort of genesis will prove to be false. In reference to this kind of genesis, Spencer says: "In certain lepidoptera of the groups of psychidæ and tineidæ, pertherogenesis appears to be a normal process—indeed, so far as is known, the only process; for of some species the males have never been found." Please bear in mind the phraseology. He says, "appears to be normal." Here is an expression of doubt. It is not based on fact. And then he says, "the males have never been found." He does not say, that the males do not exist. The probabilities are that they do exist, but, because of their unlikeness to the female, they have escaped observation. The fact that there is a female, implies, and would seem to necessitate, a male.

Prof. Loeb, by immersing sea-urchin's eggs in seawater, charged with magnesium chlorid, fertilized them, and caused them to germinate. This is artificial parthenogenesis, but it proves, that, in normal fertilization, the spermatozoon bring to the eggs certain, definite, chemical substances, like the substance used by the professor. It does not disprove sexual genesis, nor prove that "true parthenogenesis" is normal.

There is another variety of genesis recognized by biologists, which is not sexual, but in these individuals, though they seem to be created without sexual organs, still there are two separate lives which must blend to reproduce offspring; and the inference is, that these two lives are as opposite to each other as though they were male and female. And when these two lives combine for reproduction, it is a complete surrender of body, soul, and spirit of each life; for all of one life is blended and consumed with all of the other life.

Just think of two lives blending into one life, and how they are consumed with joy. Just think of offspring, that result in the loss of both parents.

> It took all of father, and father is tother,
> It took all of mother, and mother is the other,
> To produce another.

Life and love coalesce, and are born again. This is annihilation and resurrection without death. These creatures do not die, but undergo a honeymoon translation. This is the most perfect and complete love-union on record.

Complete union of two individuals in plants—palmellæ, also desmidieæ.

Example in animal life, in which it is believed that all of two individuals unite to reproduce, found in the lowest forms of protozoa.

Genesis is full of opposites from start to finish. There is a reverse, or opposite genesis to that just considered, which is found under genesis, by fission. The slipper-animalculis (paramecium bursarium), is an example. In this kind of life, instead of two complete lives blending to form one life, generation proceeds in the opposite way, namely, one individual, by fiission, forms two lives, and each of these lives, in turn, divide into two lives, and so on.

We have previously spoken of a style of generation peculiar to plants, in which one generation was sexless, and the other not, but there is, also, a similar type of generation among animals, in which there occurs two opposite and reverse processes of generation. It is found in Spencer's classification, under metagenesis. This is, also, a form of sexless genesis, which depends, somewhere along the line, on sexual genesis. It has to fall back on that, or this kind of genesis would be impossible. In one kind of metagenesis, the individuals bud from the outside of the parents, as in the Salpæ. This is called external metagenesis, but there is, also, a reverse, or opposite process of generation, which is termed internal metagenesis. Certain entozoa of the genus distoma exhibit it. This is an example of gemnation.

You see, therefore, that in genesis, we not only have individuals that are opposite, but we have processes of development—of generation, that are opposite. There are opposites within opposites, or double opposites, in generation; also variation, great variation, and reverse variation.

Let me now call your attention, for a little time, to the variation, or difference, in animals, that mate, and show how individuals vary according to gender.

In bird life, in some species, there is very little difference in outward appearance between the male and female. For example, the sparrow, also the robin. The male robin is perhaps a trifle larger than the female; has a redder breast, and darker feathers on his head. The female robin has duller feathers on the breast, and is speckled on the front of the neck, and the upper portion of the chest. In other birds we find a marked difference in the outward appearance of the male and female. For example, note the difference between the peahen and the peacock. I need not go into details, as you are all familiar with these birds. Also note the difference in some of the pheasants, especially the Chinese pheasant. The male has brilliant plumage, long tail-feathers, spurs, and about his head there is a gorgeous hood, which is peculiar. The hen of this specie, also, the peahen, are each so unlike their consorts, that you might doubt how they came to mate. There certainly is great difference in their appearance.

Among other animals, the difference between the male and female is quite as striking. For example, the male lion has about his head, shoulders, and breast a prolific growth of hair, or mane, whereas his female companion has no more hair about her head, chest and shoulders, than elsewhere on her body; and there is, also, a difference in the formation of the head. I need not dwell long on these differences. Differences in mates exist all through the Animal Kingdom. In some species the outward variations are slight, and scarcely noticeable, whereas in others they are distinctly marked. In some species the difference becomes very great, and is so surprising and unexpected, that it would seem to completely prevent their association and mating, and thus prove a bar to generation.

I will only cite one example where the unlikeness between the male and female is so great that they sever the classification, and apparently do not belong to the same species nor family. For example, the glow-worm is a female. You would naturally expect that her male companion would, also, be a worm, but he is not. He is a fly—a beetle, and beetles are on the wing only at night. Now mark the wonderful intelligence, adaptation, and fitness manifested by the Creator, in these creatures, to the end, that they may meet, mate, and generate. The beetle would never in the world find his bosom companion, if she was not provided with a light. When I came upon this remarkable revelation of conjugal affiliation, I was filled with poetic inspiration.

LIGHT IN THE WINDOW FOR THEE, LOVE;
or,
THE BEETLE'S HOME-COMING.

Where is my wife to-night?
Says the beetle in a plight,
As on a starless night
He wanders.

The beetle, like the bee,
Has a heart full of glee,
As o'er the meadow, the lea,
He flits for his "honey."

I shall know her by the light,
That shines so warm and bright,
It glows, night after night,
For me.

Ah! here you are at last
Down in the dewey grass.
Now, clasp me in your arms,
Oh! the rapture of your charms,
Home, sweet home!

The variation in individuals, according to gender, is very great, even among those of the same species, or family; and the more marked the variation in male and female individuals of the same species, the greater the variation in the offspring.

Let us next consider the fact, that, in generation, the type follows the male. You, of course, are all more, or less familiar with the ass—that concentrated and pugmacious quadruped, as he is frequently met in unexpected places. Well, this little ass, through the assistance and genius of man, became the father of a bigger ass—the mule. The mother of the mule is the female of the horse, commonly called the mare. Now, the mule strikingly resembles its progenitor in every way—tail, ears, hair, feet, also, in voice. The mule neighs like his father—the ass.

Now, let us look at the reverse cross. That between the female ass and the horse. The progeny is called the Hinny—a very different animal from the mule. The Hinny's voice is like that of the horse—he neighs, and in general characteristics he more nearly resembles the horse than his mother—the she-ass.

These examples show clearly that, in generation, the type follows the male ancestor. There are numerous other examples in proof of this point, but it is unnecessary to cite them.

POINTS OF INTEREST TO THE GENERAL PRACTITIONER.

BY J. LEE FOWLER, M.D.

IT is a well-known fact that the recorded cases of diabetes mellitus in children are not numerous; for example Stein could find only 117, and 75 of these were published subsequent to 1876. A study of these cases showed the importance of heredity from an etiological standpoint, the parents being either diabetic or neuropathic. The influence of other diseases was seen in the fact that the diabetes was complicated by gastric catarrh, morbus maculosus Werlhofii, typhoid, malaria, measles, and furunculosis. The causative influence of a starchy diet, exposure to cold, and concussion of the brain, was noted in some of the cases. The initial symptoms varied; in fact, the beginning of the disease was seldom observed. Occasionally there was emaciation, peevishness, enuresis, or intense hunger; polyuria was the principal symptom, and the quantity of urine passed was sometimes enormous. The specific gravity varied from 1,008 to 1,042 and the quantity of sugar from five to ten per cent. Other symptoms which might be added were weakness, sweating, nosebleed, furuncles, abscess, and cataract. As might be expected the digestive organs gave marked evidence of the drain to which they were exposed. The patients exhaled a characteristic odor of vegetables, apples, or wine, and in some cases there were carious teeth, loss of appetite, vomiting, constipation, or diarrhea. Death resulted in those cases in which the respiratory organs became affected. Nothing definite could be concluded from the pathological anatomy. The duration of the disease varied from two days to five years. In six cases the disease was fatal in a month, in 17 within a year, in 10 it continued more than a year, none of the cases being cured. Of 70 cases there was recovery in 14, improvement in 4, and death in 52. The regulation of the diet forms the most important feature of the treatment. Sour milk, to which glycerine and mannite were added, with three parts of boiled water to one of milk, was given to nursing-infants with satisfactory results, the sugar disappearing permanently from the urine. The diet for older children was limited to soup, roast meat, raw eggs, cheese, and sour milk, sugar and starchy food being prohibited. Cod-liver oil and iron were also given with satisfaction. The alkaline carbonates were found serviceable, also large doses of mineral acids, which were given before breakfast and dinner. The acetate and sulphate of iron, and salicylate of soda may also be tried.

Some years ago Sticker made some investigations on the action of saliva which tend to alter materially the views on stomach digestion. The idea that the saliva exerts its amylolytic action until the increasing secretion of acid gastric juice checks it, and that then the peptonizing of albuminoids begins, is combated by Sticker who has come to opposite conclusions; the importance of saliva lies in the fact that absence of it causes a decreased or total failure of secretion of gastric juice, and that want of saliva causes not only abolition of amylolytic action, but also influences essentially the gastric proteolysis.

A patient who had no salivary secretion was used for examination. Examination of the gastric contents showed not only diminution of amyloid, but also of proteid, digestion, consequently diminished secretion of gastric juice. Administration of jaborandi not only reestablished the saliva, but caused a return of the normal gastric secretion, so that in two weeks the patient had entirely recovered.

Since the jaborandi could not have affected the stomach directly, it may be assumed that the secretion of saliva, and its introduction into the stomach, excited the latter to activity.

This view is confirmed by an experiment made by Stickler to that end. Egg-albumin and starch were introduced into the stomach and allowed to remain two hours, in one case avoiding swallowing saliva, in another allowing it to mix in the normal manner with the contents of the stomach.

In the latter case the stomach was found empty, in the former undigested starch and albumen were found and the gastric juice possessed only slight peptonizing power.

It is probable that the nitrites affect more or less all the tissues of the body, but their more distinctive influence is upon the blood and the muscles. In the blood they convert the oxyhemoglobin into methemoglobin, and this conversion is connected with a locking up of oxygen in this new compound. It is probable that in contact with living tissues the methemoglobin is easily changed into oxyhemoglobin, the nitrate disappearing at the same time, and that the former does not seriously interfere with the power of the blood to nourish the heart muscle. There is no cause for fear of the production of methemoglobin or injury to the blood from the medical administration of the nitrites. With regard to skeletal muscle tissue, the nitrite molecule in striated muscle tissue tends to decrease the contractile power and the duration of vitality. On involuntary muscle, both in cold-blooded and warm-blooded animals, the nitrites have a powerful paralyzing effect; this group causes a temporary paresis of the muscular structure contained in the arterial walls, and hence dilatation of the vessels. On the heart muscle the effect is much the same as on the contractile tissues of the vessels. The results of experiments show that the molecules of the nitrite group, in whatever combination, when present in even small quanties, tend to quicken the contractions of the heart, but also to weaken them. If the solutions coming in contact with the heart are very dilute, the quickening may make up for the weakening action, and the heart probably does as much, it may be more, work for a short time.

Stronger solutions after quickening, weaken, slow, and arrest the heart's contractions. But susceptible though the heart is to the influence of nitrites, the evil influence is very evanescent if the nitrite molecule be removed. On the nervous system their influence is to depress the functions of the nerve centers and nerves, but not to the extent which might be expected from their influence on the muscles, vessels, and heart. In toxic doses in animals they cause heaviness and apathy; in man, cerebral depression, probably due to their direct influence. In man other symptoms so far predominate that even from toxic doses no distinct indication of an effect on the spinal cord has been noticed.

Locally, the nitrites do not have an analgesic effect. As regards the respiration it is believed that medicinal doses tend to stimulate it, or at least so far as the respiratory center is concerned. The effect upon the pulmonary blood-vessels is not settled, although the author believes that the administration of the nitrites is followed by temporary dilatation of the vessels of the lungs, that the work of the right heart may be relieved by them, and that the good results in dyspneic attacks may be the direct result of the relief thus given to the lesser circulation. The effect upon the digestive organs varies greatly: in some individuals they act as gastric irritants, causing sickness and diarrhea; even if inhaled, the resulting stomach irritation and diarrhea may be due to their excretion by the gastro-intestinal tract. As far

as concerns the urinary organs the result is again doubtful. They are, however, by the author, held in light esteem as diuretics, although they possess the advantage of not irritating the kidneys. In considering the therapeutic application of the nitrites three points are worthy of note: 1. The minute quantity which may influence the vascular system, and, as a consequence, certain functions of the body—one-eighth of a grain of sodium nitrite, a small but uncertain fraction of a minim of ethyl nitrite, one sixteen-hundredth of a grain of nitroglycerine. 2. Notwithstanding their potency, even large quantities do not cause death. 3. The action of the nitrites is very evanescent.

The class of cases in which these remedies will be of the most utility are those in which the heart is embarrassed in its work owing to a want of due relationship between its power and the caliber of the vessels through which it transmits blood. In angina pectoris it is probable that the increased tension is the cause of the suffering, and in its reduction by the use of nitrites the object is threefold: 1. To relieve pain as rapidly as is possible; 2. to avert a fatal termination; 3. to prevent recurrence of the pain. To relieve the urgent pain and its concomitant danger the fatty nitrites should be inhaled; of which an example is amyl nitrite, although it is impure as now found. The amyl nitrite, may fail: 1. If the paroxysms are due to neuralgia of local origin; or it may be reflected or hysterical, and circulatory changes have put little part in its production; 2. because of the short duration of its action, it does not break the spell of the vessels' contraction; 3. the person may be insusceptible to its influence; 4. the case may be an advanced one which would have been relieved at an earlier stage. In these cases the nitrites whose effect is more lasting should be tried. Of these, nitroglycerine is by far the best, as it reduces tension more quickly than either the sodium or ethyl nitrite. For the prevention of dyspnea connected with other forms of cardiac, and with pulmonary disease the nitrites are of great service. They are naturally more useful in mitral disease, since here paroxysmal dyspnea is more frequent than in aortic troubles, but aortic incompetence is no bar to their administration in small quantities when breathing is oppressed. In valvular disease, as in simple dilatation, weakness and irregularity of the heart's action need not be taken into account in giving small doses for dyspneic attacks; such doses do no harm, even if they do no good. Syncope is the result of the failure of the heart to supply the cerebrum.

Campbell reports six cases of gastro-intestinal disorder occurring in one family in a period of 12 days, one being fatal. The character of the alvine dejections suggested that the trouble was dysenteric. Investigation showed that the source of poisoning was the eating of tomatoes which had been preserved in cans which formerly contained peaches. These cans having been ineffectually scalded with wax, had been re-heated and resealed. A chemical examination of the contents of a can revealed a comparatively large amount of lead. He concludes: 1. Stannous salts are poisonous to the human system, being similar in their action to the other mineral poisons—lead, zinc, arsenic, antimony; 2. the salts of tin are anthelmintic as well as the powdered products; 3. toxic doses of the salts produce symptoms similar to those from ptomaines; 4. canned-food products may contain stannous salts in poisonous quantities; 5. the danger from this source is increased from exposure to the air; hence, all fruits should be emptied from tin cans as soon as opened. The treatment pursued in these several cases was entirely symptomatic—astringent, demulcent, anodyne, or stimulant, as the symptoms indicated. The diet was milk.

Ferranini formulates the following propositions:

(1) Purely nervous gastropathies are excessively rare. (2) Disturbances of chemism or of secretion may be present alone, but motor disturbances and affections of absorptive power are always attended by affected secretion. (3) The most frequent functional disorder of the stomach is hyperacidity of the gastric juice. (4) In hyperacidity of the gastric juice the symptoms are related in part directly to the increased amount of hydrochloric acid present, and the increase of the antifermentative action; in part to the cause whose result the hyperacidity is. (5) Cases of hyperacidity in which the motility is disturbed, may rest on a purely nervous basis. If, however, both of the last-mentioned functions are involved, the case is one of beginning chronic gastritis. (6). Hyperacidity may be purely primary, but in chronic gastritis it, like the other functional disturbances mentioned, is the result of an anatomical lesion. (7) In hyperacidity of a purely nervous origin the diminished motility is improved if the acid gastric secretion be neutralized. If, on the other hand, it is due to chronic gastritis, the neutralization is without effect. (8) In gastric ulcer hyperacidity is the most constant symptom; and the other disturbances attending it permit of a conclusion whether chronic gastritis is also present. (9) Simple chronic gastritis is to be distinguished from atrophic and sclerotic by the absence in the latter of the hydrochloric acid, pepsin, and lactic ferments, the abolition of the power to dissolve starch, the possibility of the solution of albumin under the influence of lactic and butyric acids, and the diminution of the power of absorption and of the motility. (10) This simultaneous existence of the alterations in the different functions of the stomach offers no criterion for the assumption of the presence of a carcinoma.

Arsenic is of especial service, in persisting pemphigus. As a rule, no fresh bullæ are produced after the administration of the arsenic has been commenced, and the patient quickly regains health, with perfect soundness of skin. In the treatment of common psoriasis, although the effect of arsenic is quite as definite and certain as in pemphigus, it is not nearly so immediately curative. Sometimes its effects are first manifested by the patches taking on a congested condition, and becoming very irritable. In a large majority of cases it will in the end, if well pushed, cause the eruption almost wholly to disappear. It seldom or never brings about a complete cure, and of late years we have been so much accustomed to reinforce it by efficient local measures that it is not always easy to estimate the proportion of our indebtedness to it.

As a tonic arsenic should be used only in small doses. In elderly persons, unless the disease imperatively demands it, it should not be prescribed. With the young, arsenic appears usually to agree well, and even very young children, although they but seldom need it, will bear full doses without ill effects. Among the facts which have been thoroughly established as regards the possible effects of arsenic it may be claimed that it is an undoubted cause of peripheral neuritis. Its influence in inducing herpes zoster, when given for the cure of other skin diseases, affords the most common example of this. It has been observed by those studying cases of poisoning by arsenic, and is especially noted by Christison, that local and unsymmetrical forms of paralysis not very infrequently result. During its medical use patients not infrequently complain of local numbness, more especially of portions of the skin of the lower ex-

tremities. Numbness and tingling of the soles of the feet are by no means infrequent symptoms.

It is a very important question, especially in reference to chronic skin diseases requiring its use during long periods, whether arsenic is prejudicial or otherwise to the general health. If given in small doses, with the exception of the risk that it may cause shingles, its effects are usually inappreciable, and there is no danger of its cumulative influence. If arsenic is given in full doses for long periods, although it may be doubted whether there is any reason for styling it a cumulative drug, its employment is not without danger. There are certain symptoms which ought to lead us to take alarms. If the patient has numbness of any particular part of the skin, or if there be decided loss of flesh, then it ought to be suspended. Irritation of the conjunctiva is, of course, a well-known symptom of disagreement, but it may not be observed as frequently as some of the others just mentioned, and to them be added a liability to diarrhea, and, in a certain number of cases, extreme irritability of the bladder.

Under regular medical supervision a patient cannot well receive injury to his general health from arsenic. If, however, a patient who has received great relief from his skin affection has obtained a prescription which he uses on his own responsibility, and with perhaps considerable increase in the dose ordered, it is then possible that serious or even fatal results may ensue.

As regards the influence of arsenic on the skin in persons previously healthy: Now and then we have opportunities to observe its action upon the skin when it is prescribed for maladies quite remote from the skin itself. Its effects upon the nutrition of the skin, if the doses are large, is to make it brown and muddy-looking; it is also dry and harsh on the trunk and limbs generally, although there may be perspiration on the palms and soles. The discoloration may be attended with actual pigmentation, and may increase until it almost resembles the tint of Addison's disease.

In extreme cases not only is there dryness and discoloration, but scaly patches may form on the knuckles, elbows and knees, much resembling common psoriasis, but less well circumscribed. A much commoner result than this is, however, disturbance of the nutrition of the skin, not over the body generally, but over the palms and soles only. On these parts, in addition to dryness, corns may form, and in certain very rare cases these corns pass on into epithelial cancer. A peculiarly dry condition of the palms and soles, with tendency to the formation of corns, is by no means an infrequent result of long continued courses of arsenic, and should lead to its discontinuance.

Howard's researches as to the best method by which, in cases of apnea, with falling backward of the epiglottis show that the latter can be raised so as to permit of the free entry of air to the respiratory passages. He believes for numerous reasons that traction on the tongue does not have the desired effect upon the epiglottis, and shows that the only practical method of attaining this end is by extreme extension of the head and neck. For making this he gives the following reasons:

Traction on the tongue is ineffectual because:

(*a*) The tractile force supposed to be exercised upon the epiglottis is arrested chiefly by the frenum linguæ, and through the muscular fibers within it is expended upon the inferior maxilla into the genial tubercles of which they are inserted.

(*b*) The surviving force is expended almost entirely upon, and intercepted by, the anterior pillars of the fauces.

(*c*) For any tractile force which may survive, a continuous and sufficient medium for its transmission to the epiglottis is wanting.

Extension of the head and neck is the only sure means of causing instant and complete elevation of the epiglottis, because: by a three-linked chain, in which the hyo-epiglottic ligament is the lower link, the body of the hyoid bone the central link, and the combined genio- and mylo-hyoidei muscles the upper link, the epiglottis is so connected to the body of the inferior maxilla, that above a certain point, as the body of the lower jaw is moved upward, the epiglottis instantly, irresistibly, and inevitably moves upward exactly in unison till it is erect. The violent wrenching asunder of the clenched teeth, in proportion as it depresses the body of the inferior maxilla, antagonizes a distinct effort of Nature to maintain the elevation of the epiglottis.

Having, by bringing the patient to the edge of the table or bed, or by elevation of the chest, provided that the head may swing quite free, with one hand under the chin and the other on the cortex, steadily but firmly carry the head backward and downward. The neck will share the motion, which must be continued until the utmost possible extension of both head and neck is obtained. Assuming the mouth to be shut and the inferior border of the inferior maxilla to be at a right angle with the cervical column, as in the average recumbent posture, the head must be continued to be extended from 30 to 35 degrees more before it is possible for the epiglottis to be affected at all. Not until after the skin from the symphysis to the sternum is quite tense do the relaxed muscles in question beneath it become tense at all. These being tense, from this point the elevation of the epiglottis begins.

In a nut-shell: Make the line of skin from the chin to the sternum as straight as it can be made, and the complete elevation of the epiglottis is assured.

By extension of the head and neck carried to the utmost, the remaining obstructions from the backward-fallen tongue, the velum palati, and uvula, are also simultaneously removed, and the entire pharynx is enlarged throughout. Because: (*a*) The tongue, the dorsum of which before fell by gravitation upon the then horizontal posterior wall of the pharynx, falls upon the now horizontal arch of the palate. (*b*) The velum palati, by means of the great tension of the palato-pharyngei muscles, is pulled away from the posterior wall of the pharynx, the entire membrane being stretched tight forward and downward, behind part of the dorsum of the tongue, helping to complete the shutting of the tongue out of the pharynx and into the mouth, and together with its dorsum forming a partition—the anterior wall of a new air-way, thus created and maintained. (*c*) The pharynx, anteriorly, from the base of the tongue to the cricoid cartilage, is stretched strongly forward by the extreme tension of the sterno-thyroidei muscles.

Howard's results are as follows:

(1) Contrary to universal belief, traction of the tongue cannot raise the epiglottis. (2) By sufficient extension of the head and neck, whether by volition, instinct, reflex action, or by the effort of another, whether in the healthy, the dying, or the dead, the epiglottis is instantly, and beyond prevention, made completely erect. (3) By complete extension of the head and neck the tongue and velum are as respiratory obstructions, simultaneously with the epiglottis, removed; and without a moment's delay the entire air-way can be straightened, enlarged, and be made free throughout by the nearest person. (4) If syncope happens to be the chief factor,

or only incidental, this also gets thus the quickest and best corrective.

The treatment of intermittent fever by the method of Boudin is not the treatment or arsenic, but by arsenic administered in a certain way. Arsenious acid is dissolved in water in the proportion of one to one thousand. Advantage is taken of the tolerance of arsenic at the outset and an amount of this solution is given each day, equivalent to nearly one grain of arsenious acid, and this amount is continued daily until symptoms of intolerance appear—nausea, colic, sometimes even vomiting and a slight diarrhea. The daily amount is so divided that it is taken in equal portions every quarter of an hour, from six to seven in the morning until seven or eight o'clock in the evening, in two or three spoonfuls of water or milk. The patient, also, must be well nourished. The writer should add a third requisite—that the administration of the remedy must be entrusted only to a person who will religiously follow the directions as to time and amount. At the end of from three to five days the symptoms of intolerance appear; then it is necessary to lengthen the interval between the doses, but not to suddenly stop the remedy. The interval of administration being doubted, again the symptoms of intolerance will appear at the end of 48 to 72 hours. Again the interval is doubted, and the remedy is continued for from eight to ten days. Relapses are not only rare, but even exceptional.

Salicylic acid and its salts are among the more effectual agents in the treatment of pleurisy with effusion. (1) In effective doses the remedy is harmless, and with proper selection of the preparation, and care in administration, causes little or no discomfort to the patient. (2) Salicylates act most promptly in pleurisies with serous effusion, of recent origin or of long standing, but they are efficient in simple dry pleurisy, and often act favorably in secondary pleurisy. (3) There is no evidence that they are useful in suppurative cases. (4) The drug acts as a diuretic, but may have an effect on the pathological process, or on the cause of the disease. (5) Salicylates have a more marked action in pleurisy than have the diuretics commonly so called. (6) The duration of the treatment with salicylic preparations is less than with diuretics, common salt, or roborant medication. (7) The remedy can be used at the earliest period, and favorably affects all symptoms. (8) The drug may be given in the form of the acid, or any of its salts, in doses of one drachm of the former, or one or two drachms of a salt daily. In ordinary cases it is not necessary to give the larger doses, and 60 to 90 grains of sodium salicylate, or salol, daily may be considered full beginning doses, to be diminished one-third or one-half after the effect is manifest. (9) The ordinary precautions must be observed in giving the drugs, and during their administration the total amount of urine should be measured daily.

Owen has stated that upward of 3,000 replies have been received to the inquiry papers sent out by the Collective Investigation Committee of the British Medical Association. The results of such inquiry must be taken in a general sense only, and not too much stress laid on points of detail. With these provisions they may be summed up as follows: (1) There was no district in the British Isles in which acute and sub-acute rheumatism and malignant disease were not common. (2) Rickets, although not unknown in rural districts, was mainly a disease of towns and industrial regions, and especially of large industrial towns. It was rare in Scotland, the North of England, North Wales, and Ireland, with the exception of Ulster; more common in the rural districts of Ulster and the rest of England, and especially frequent in Cornwall, Kent, and North Essex. (3) Chorea was also mainly a disease of towns and industrial regions, though by no means unknown in rural districts. It was fairly evenly distributed in the rural portions of the four counties, rare at the seaside resorts, and, by exception, rather uncommon in Glasgow and in the south and the west of London. (4) The distribution of chorea was proportioned to the prevalence of acute and subacute rheumatism. (5) Urinary calculus exhibited a tendency to affect the eastern coasts of the two islands; its chief seat in South Britain being the county of Norfolk,

Allingham divides hemorrhoids into two groups: the first including those which come down at stool, and those which are almost always in a state of prolapse and bleed profusely at each act of the bowel. In this class of cases the quickest operation is the best, since as a result of long-continued hemorrhage there is always considerable anemia, and therefore it is of prime importance that as little blood as possible should be lost from the operation and that there should be a minimum of risk of secondary hemorrhage. These requirements are fulfilled by the ligature, which can be applied in a very few minutes and is practically free from any danger of after-hemorrhage.

The second group comprises those piles which are chiefly troublesome because of the inconvenience they occasion, since they are prone to come down and prevent the patient taking any active exercise. These piles rarely bleed and do not otherwise interfere with the enjoyment of good health. Here the great point is to select the least painful operation. The best modes are crushing or simply cutting off the piles and picking up any vessels that may bleed.

In the operation of ligation with incision the pile is drawn down by a vulsellum and separated from the muscular and submucous tissues upon which it rests. The incision is made upon the skin at the junction of the mucous membrane, and is carried up the bowel, so that the pile is left connected by vessels and mucous membrane only. A strong silk ligature is then tied as tightly as possible, and the ligatured pile is returned within the sphincter.

This method is very well suited to piles which are large and vascular and are inclined to be sessile rather than pedunculated. It should be applied to patients who have any tendency to cardiac or kidney disease, or where there is a thrombosed condition of the vessels. It is the best to use when patients are feeble. Ligature is, in fact, the safest operation. Its drawbacks are that the wound takes some time to heal, there is more pain after operation and on the first motion of the bowels, than after crushing or simple excision. There is more sloughing and suppuration until the ligatures have separated, and hence there is greater liability to some contraction.

The crushing operation consists in drawing the pile by means of a hook into a powerful screw-crusher, which is tightly screwed up, and distal end of pile cut-off. The crusher should be applied on the longitudinal aspect of the bowel and should be left on the pile for about two minutes. This operation should be used when the piles are medium-sized and rather pedunculated, and the patients are in good health; but in bad cases it is not so safe as the ligature. In ordinary cases its advantages are that there is freedom from pain after operation; retention of urine is of rare occurrence; suppuration is not likely; there is little or no pain on the first action of the bowels, and recovery is usually rapid; after-contraction is not common. The clamp and cautery are not

favored by Allingham. He states that statistics show that it is quite six times as fatal as ligature or crushing and burning gives more pain after operation, as is the case with all burns. Hemorrhage is more likely to occur, there is greater sloughing of the rectal tissue. More time is required for healing and greater contraction is common, as is also the case with all burns. The excision of piles is best applied to one prolapsed pile, to the single perineal pile, so common in women, or to one pile which is complicated with fistula, ulcer, fissure, etc. As a rule, one or two vessels require clipping. It is, therefore, inexpedient to excise many piles, for there may be trouble in picking up the divided arteries.

Allingham believes that Whitehead's excision method—that is, removal of the entire pile area, stitching of the healthy bowel above to the sphincter—is rarely necessary. It is a slow and bloody operation, and is at times followed by contraction. Few cases are really well under three weeks after operation, and premature resumption of the ordinary ways of life may cause a greater tendency to contraction, or, what is worse, troublesome and tedious ulceration may supervene and take months to heal.

MODERN ANTISEPSIS.

BY WM. R. BRUBAKER, M.D.

THERE are two ways to render innocuous the living germs of disease in the intestine—either by the mouth or the anus. For use in the first method only such substances can be employed as are able to pass the stomach unchanged. Calomel has been shown to be useful in this way in the case of simple fermentative processes, but it is useless in cases of longer infection, while charcoal, naphthalin, salicylate of bismuth, and iodoform, have also been employed. These substances exert an antiseptic influence on the intestinal contents, it is true, but, on account of their insolubility are unable to influence the intestinal wall itself; and experience shows that they possess no power over the course of such diseases as typhoid fever. It is clear that the administration by the mouth of soluble disinfectants, capable of being absorbed in the intestine, or of undergoing decomposition there—as carbolic acid, sublimate etc.—can never fulfil the purpose of a thorough intestinal antisepsis, for, apart from the fact of the smallness of the dose which the human economy will tolerate, the greater part of the substance is absorbed in the stomach, and the remainder reaches the intestine so altered that its antiseptic power is largely gone.

It is through the anus, therefore, that is the best way to bring antiseptic substances directly into contact with the germs of disease. That large injections will pass the ileo-cecal valve, has been repeatedly proven by experiments. The advantages of this method are: that the mechanical irritation produced by any powder is done away with, that the stomach is spared all mechanical or chemical action, that there is a more direct contact of the drug with the diseased portion of the intestine, and that greater doses of a saturated solution may be employed than can be introduced through the stomach. The method possesses secondary actions not to be undervalued. Thus, the bodily temperature can be reduced by the use of cold injections, or raised by hot fluids, or the intestine may be washed out and large amounts of bacteria and ptomaines removed.

Of substances to be employed for intestinal antisepsis, those to be preferred are tannic acid and carbolic acid. Sublimate has no disinfecting action, on account of the combinations which it forms with albumen in the bowel. Tannic acid fulfils the double indication of a rational intestinal antisepsis, namely, paralyzing the vegetative activity of the bacteria, and the rendering innocuous the poisonous ptomaines formed there. Experiments have shown this, and actual clinical experience amply confirms it. There is nothing better than tannic acid enteroclysis in all forms of intestinal catarrh produced by bacteria, and accompanied by fermentation. The addition of gum Arabic is desirable in dysentery when the bowel is irritated. In case of great tenderness as injection of one to one and a half quarts of oil is of advantage, occasionally alternated with enemata of tannic acid. In typhoid fever enteroclysis is a valuable method; the meteorism and diarrhea rapidly diminishing, and the disease running a favorable course. In the very earliest stages of the disease it even seems possible to exercise an abortive action upon the commencing typhoid infection in the intestine.

Welch has recorded the histological changes found in the organs of guinea-pigs, rabbits, and kittens that died at periods of from 38 hours to eight and one-half days after receiving subcutaneous inoculations of pure cultures of the Klebs-Loeffler bacillus obtained from undoubted cases of primary diphtheria. At the seat of inoculation a grayish, necrotic, pseudo-membranous focus developed, which was surrounded by a red zone of varying size; the subjacent muscle was greatly congested; the adjacent subcutaneous connective tissue was edematous, and presented a gelatinous appearance; neighboring lymph-glands were enlarged. The peritoneal cavity contained an excess of fluid; the layers of the peritoneum were injected, and in some cases were the seats of ecchymoses. The liver was congested, in some cases fatty. In some cases the spleen was enlarged. The kidneys were moist and hyperemic. The adrenals were congested, and in many instances hemorrhagic. The agminated glands of the intestine were abnormally prominent, and exhibited a number of whitish spots imbedded in a grayish material. In many cases the pleural cavity contained an excess of fluid. The mediastinal and bronchial glands were swollen and reddened. The heart appeared normal, while the lungs sometimes presented areas of congestion or of consolidation. The deep cervical glands were commonly reddened. The thyroid was uniformly congested, sometimes hemorrhagic. Bacilli of diphtheria were found at the seat of inoculation, both free and within leucocytes. Many of the leucocytes presented fragmentation of their nuclei. The local action of the bacilli is most intense. Not only the leucocytes, but the fixed cells and the nuclei of connective tissue and of muscle also suffer. There were hemorrhages beneath the capsules and into the substance of the affected lymph-glands. The blood vessels contained a greatly increased number of leucocytes. The number, character, size, staining capacity, and configuration of the nuclei of the cells of the glands were greatly altered, principally in the lymph-follicles, in less degree in the lymph-cords and lymph-sinuses. Similar alterations were found throughout the lymphatic structures of the body: in the spleen, mesenteric, retroperitoneal, bronchial, mediastinal, and cervical glands, and intestinal lymphatic apparatus (Peyer's patches, solitary follicles and diffuse lymphatic tissue). Degenerative changes were found in the liver. Hemorrhages under the capsule and in the subjacent lobules were common. The intra-lobular hemorrhages resulted from breaches in the continuity of the walls of the central veins, which had become hyaline. Fatty changes were

found in the epithelium of the tubes and glomeruli of the kidneys. Hyaline alterations were present in the smaller vessels while there were hemorrhages beneath the pleura.

Gunning, who is Professor of Hygiene in the University of Amsterdam, has given an account of experiments conducted in his laboratory on the action of common and medicated soaps and of corrosive sublimate on the bacillus of cholera diffused in ordinary river water, which appear to involve far wider issues than those which prompted them, viz.: the dangers apprehended from the use for ablution of the water of the river Vecht, in the event of a recurrence of the cholera epidemic at a time when the scarcity of the purer "Dune" ground-water should necessitate its employment for culinary and drinking purposes only. Dr. Nijland used Vecht water, to which was added agar-agar cultures of the bacillus or vibrio of cholera. The general conclusions were that while they soon died out of pure water, the greater the organic pollution present the longer did they retain their vitality and the larger the amount of germicides required for their speedy destruction, such reagents being almost useless in diarrheal evacuations. Ordinary soaps dissolved in Vecht water in the proportion of 1.8 per mill. did not destroy them within 15 minutes, 2.4 parts per mill. being necessary to do so with certainty in 10 minutes. So-called disinfecting soaps containing 3 to 5 per cent. of carbolic acid, salicylic acid, creolin, etc., were no better, if so good. But 2.4 per mill. in a bath of 120 to 150 liters means the consumption of 290 to 360 grammes, whereas the soap commonly used does not exceed 9 to 24 grammes.

But when only 0.12 per mill. of a soap containing one per cent. of sublimate was dissolved in water charged with cholera bacilli (2,000 to the cubic cm.) no more than 100 were alive after the lapse of one minute, and none at all in five; while 0.006 and even 0.003 of the pure sublimate was sufficient, and the addition of a little salt rendered it still more active.

Dr. Gunning recommends its employment in the form of "pastilles" or tabloids containing 5 mgrs. each, one or two to be used, according to the size of the bath, no possible danger could be incurred by such practice, since the maximum dose for internal administration is as high as 20 mgrs. For the sterilizing of choleraic or typhoid stools, sublimate is, however, practically useless, from its coagulation of the albuminoid matter in which the bacilli become imbedded and in fact protected.

Gastric antisepsis is normally obtained by hydrochloric acid, and Cohn has shown that when the gastric fluid contains seventy-hundredths per mille of hydrochloric acid, lactic acid fermentation is arrested, and from fifty to seventy-hundredths will check acetic acid fermentation. Lavage should be performed either with pure, preferably boiled water, or with salicylic acid, two to three parts; thymol, ½ part; borate of soda, 20 parts; creolin ½ to one part per thousand. Or hydrochloric acid, or a saturated aqueous solution of boric acid, may be prescribed. Intestinal antisepsis may be obtained by calomel in fractional doses every hour, particularly in cholera and typhoid fever. Lavage of the large intestine may be carried out by long tubes, or by special apparatus. Various solutions are used—naphthol, tincture of iodine, sulphide of carbon, chlorate of soda, nitrate of silver, tannic acid, boric acid, the latter according to Bouchard, giving rise to irritation of the large intestine, with elimination of false membranes. The drugs used are charcoal, iodoform, camphor, calomel, salicylate of bismuth, betol, salol, benzonaphthol, and the naphthols. Naphthol irritates the stomach and increases the hydrochloric acid. In renal disease one must use with care the remedies which in decomposition give rise to salicylic acid, as salicylate of bismuth, betol, and salol. The preference is given to benzonaphthol, which is harmless, the required amount being from 75 to 150 grains per day, administered in wafers, with about one-fourth of this amount for charcoal. This remedy passes through the stomach without change, and in the intestine is decomposed into naphthol and benzoic acid, the latter being eliminated by the kidneys as hippuric acid. Resorcin has been used in infantile diarrhea and in dilatation and cancer of the stomach, and lactic acid has been recommended in the green diarrhea of children, although it succeeds equally well in the various diarrheas of adults. Kephir has a favorable action also by reason of the lactic acid which it contains. The diet is important. Milk, preferably sterilized, often gives brilliant results.

Many writers have spoken of the rarity of the combination of tetanus with a microbic disease, while Bolhomme has reported its association with typhoid fever. His search through medical literature has disclosed no other instances of this combination. The first case, briefly reported, occurred in a man who, having a wound on his finger, developed typhoid fever, and died after 15 days with the symptoms of tetanus. The second case, a patient under the author's own observation, was a man of twenty-five years suffering from typhoid fever, who fell from a window while semi-delirious and received wounds. About 11 days after this accident the symptoms of tetanus developed and increased until terminated by death. The etiology was interesting in this instance. The patient, being a cavalryman, was in constant contact with horses, and wore clothes impregnated with their sweat, and may have acquired the tetanic infection in this manner; or it may have been through the contact of his wounds with the earth on which he fell and which was rich in manure. Bacteriological inoculation experiments made with the earth from the place on which the patient fell appeared to prove beyond a doubt the telluric origin of the disease in this case. It should be noticed that the first case also occurred in the person of a cavalryman.

The author claims that these two observations put beyond doubt the possibility of the simultaneous appearance of typhoid fever and tetanus in the same individual, and without their exercising the slightest influence upon each other.

By administering salol, we may produce a stream of aseptic urine, which washes the mucous lining of the kidneys, bladder, and urethra, thus establishing the antisepsis of these surfaces much more thoroughly than can be done by the use of injections from without. Sahli has shown that the urine of persons who are taking salol is antiseptic, and also that the salol is well borne, even in large doses.

This remedy would seem to fulfil all the conditions that Bouchard in his studies of the therapeutics of infectious diseases, has put down as necessary for the antisepsis of this special series of organs. It has the advantage of being only slightly soluble, and so non-toxic, it is not a general antiseptic, an antithermic, or intestinal antiseptic, but seems to reserve its action for the urinary passages, and its adaptability for this special end is comparable with the action of naphthol in intestinal antisepsis. Salol alone or in combination with balsams was given in seven cases of blenorrhagia, the dose varying from five to eight grains. The discharge decreased rapidly in each instance, and in one case which had lasted for four days the cure was complete in three

days. The good results seem to be attributable to the fact that the salol renders the urine aseptic, and probably antiseptic. Certain vases, in which the salol was administered alone, proved that the good result was due to it, and not to the balsams, although the writer prefers to give it with copaiba or cubebs to help hasten a cure.

An interesting article has recently been published by Dr. Carl Luderitz, concerning the influence of infusions of coffee on microorganisms. Investigations here reported seem to show in the most unmistakable manner, that infusions of roasted coffee have very distinct antiseptic properties, and the importance of this, from a practical standpoint, becomes apparent at once. If infusions of coffee have a marked deleterious action upon pathogenic organisms, and especially upon some forms which are the cause of epidemic types of disease, it may be a valuable agent for the restriction of these, and may be used for quenching thirst when there is any suspicion as to the contamination of water. Especially may this be true of those epidemics of typhoid fever and cholera which are transmitted almost entirely through the medium of the food and drink.

The influence of coffee infusions of different strengths, varying from 10 to 30 per cent. upon the growth of various forms of pathogenic and nonpathogenic microorganisms, was carefully tested. The coffee used in these experiments was roasted Java, and the infusions were made by adding from 10 to 30 parts of coffee, by weight, to 70 or 90 parts of boiling water. The coffee, freshly roasted and ground fine, was covered with boiling water, and the infusion thus prepared was placed in a closed flask in a water-bath for about 10 minutes, and was then filtered through a sterilized filter.

Various forms of microorganisms were retarded in their growth and life by exposure to the infusions of coffee, but they varied greatly in their susceptibility to its action.

The typhoid bacillus was completely destroyed after an exposure in a five-per-cent. infusion for three days, in a 10-per-cent. infusion for one or two days. The bacillus of Asiatic cholera was destroyed in a one-per-cent. infusion after seven hours' exposure, in a five-per-cent. infusion after four hours, and in a thirty-per-cent. infusion after two hours.

This is the most prompt action shown in any of the experiments; the viability of some spores was not destroyed until after an exposure of several days. The cholera spirillum was by far the most susceptible of the organisms used in the experiments, and next to it stood the anthrax bacillus without spores.

It seems probable that the antiseptic action is due to empyrheumatic substances formed during the roasting of the coffee. It is not due to the caffeine, for nutrient helatin containing a percentage of caffein representing 10, 20, or 30 per cent. of coffee infusion, exerts but very slight influence upon the growth of microorganisms.

Richardson called, some time ago, attention to peroxide of hydrogen as a valuable remedy, in which he has interested himself since 1858. The peroxide of hydrogen is still made, as Thenard first made it, by the action of an aqueous acid solution on peroxide of barium. Water may be made to contain 10 or 20 or even 30 volumes of the peroxide, the usual strength is what is known as a 15-volume solution. In order to keep the oxygen in the solution, it is necessary to have it slightly acidified, either by dilute nitric, hydrochloric, or phosphoric acid. In this form the solution can be administered internally in doses varying from a fluid drachm to a fluid ounce; but two to four drachms diluted in 10 fluid ounces of water may be considered an average dose.

The taste is peculiar, being identical with that of ozone when inhaled by the mouth, and not at all dissimilar to the taste of chlorine in a weak solution. When it is to be injected the solution should be rendered neutral by the cautious addition to it of caustic soda or potash. The soda is to be preferred; but it should not be neutralized until the time it is wanted. In the 10-volume solution it may be injected either into the cavities or into the cellular tissue without being further diluted. The solution of the peroxide is incompatible with many substances, but it is compatible with the following: the mineral acids, tannin, alcohol, glycerin, alcoholic solutions of the alkaloids, and alcohol combined either with ether, amyl hydrate, amyl nitrate, or iso-butyl. The oxygen from the peroxide can also be administered by inhalation by means of a simple apparatus. Into a glass vessel having two necks, like the ordinary Wolff's bottle, a few ounces of the peroxide solution are placed; a tube from a funnel, the tube having a stopcock, runs through the stopper of the bottle to the bottom of the contained solution. From the second neck of the bottle there springs another tube for inhalation, at the free end of which is a double-valved mouthpiece, like the oldest and best of the chloroform inhalers. The apparatus is now ready for use. When it is wanted the funnel is charged with a solution of permanganate of potassium in the proportion of 10 grains of the permanganate to a fluid ounce of water. The tap is then turned, the permanganate solution flows into the peroxide solution, and immediately oxygen derived from both bodies is briskly evolved. This, if necessary, can be caught in a flexible balloon or bag, from which it can be inhaled in measured doses, but this is not requisite. Should the practitioner desire to combine the oxygen with ether, or with any other volatile body soluble in ether but not in water, he can allow the ether or etherial solution to float on the top of the peroxide solution. Then, as the oxygen escapes, the ether, or the ether with its other volatile comrade, passes over in combination with its oxygen.

A patient can help himself to a dose at any time, as may be directed, by merely adding a measured quantity of the permanganate solution. Nitrite of amyl can be inhaled in this manner with ether, and, in short, there is here a means of administering most of the active volatile medicaments by inhalation, and in a form most ready for combination with the blood as it passes in its course over the pulmonic circuit. For a styptic and deodorant spray for the throat the following form is useful: alcohol (sp. g. 0.830) half an ounce, tannin 20 grains. Dissolve the tannin in alcohol with an ounce of distilled water and then add the 10-volume peroxide of hydrogen solution to six fluid ounces. The peroxide solution can be used as a gargle, antiseptic, and astringent. A good form for the purpose is: Tannin 10 grains, glycerine one ounce, distilled water four ounces, diluted hydrochloric acid 10 minims, solution of peroxide of hydrogen sufficient for eight fluid ounces—to make an eight-ounce gargle. Another simple yet useful preparation of the peroxide is as an unguent, for inunction over the surface of the skin after scarlet fever and other affections where there is free shedding of dead cuticle. The ointment is made by rubbing up ozonic ether with spermaceti ointment so as to form a thin paste, which may, if desired, be rendered thick by the addition of a little more spermaceti, or thin by the addition of olive oil.

Applied to the throat in diphtheritic patients, the solution of peroxide, either alone or in combination with glycerin, causes, without any doubt, a rapid separation of the false membrane, and produces a favorable condition of the local surface. But here the benefit ends; on

the general or constitutional conditions it has not as yet been efficient. The twenty-volume solution can be applied freely to the fauces, with borax or with glycerine and to adults it can be administered in the form of spray. In a case of chronic dysentery with frequent motions of a fluid and offensive character, Dr. Richardson prescribed the ten-volume solution with tannin, in one-ounce doses, diluted with a pint of tepid water. The injection was thrown into the bowel once daily, through a long O'Beirne tube, and as the oxygen was liberated freely in the intestine soon after the injection was thrown in, the evidence was supplied of the excretion of purulent fluid, or of some excreted matter from the blood. The result was very satisfactory and led to a rapid and sound recovery.

Peroxide of hydrogen may be used as an inunction for the surface of the body of patients affected with cutaneous exfoliation, as in scarlet fever and measles. In these instances the ozonic ether is used instead of the aqueous solution, because of the facility with which it mixes with the oil or lard required to make an ointment. The body is rubbed from head to foot with the ointment, the spaces between the fingers, toes, and flexures of the joints being included. The application is very agreeable to the patient, and the effect in removing obnoxious odor is most marked. But the grand advantage lies in the circumstance that the process seems to remove all danger of infection from the convalescent after three or four applications.

In diagnosis peroxide of hydrogen may be of great service. It diagnoses pus from mucous. In cases where it is necessary to distinguish between purulent expectoration and that which is not so, the sputa are placed in a test tube containing a solution of peroxide. If the matter produces liberation of oxygen, the evidence of pus is strong; and if the same event occurs after all carbonic acid is removed, the presence of either pus or of some plastic element of blood or cellular tissue element may be affirmed of a certainty.

Injected into a closed mucous cavity like the bladder, the surface being in a healthy state, and the viscus having been emptied of urine and washed out with warm distilled water, there is no liberation of oxygen from a neutral solution of peroxide. But if there is any ulceration, by which a surface of cellular tissue is laid bare, or if there is pus present, then the escape of oxygen will be so free from two or three ounces of a ten-volume solution injected into the bladder, that the gas may be detected as it escapes from the free end of the catheter by its effect in re-lighting a partly extinguished taper. In physiological research no danger was found in injecting a neutral solution of peroxide into the cellular tissue. This practice might possibly be adopted on the human subject.

In asphyxia, as after drowning and after suspended animation from chloroform and other narcotics, a hundred pints of oxygen might easily be transfused, hypodermically, by using the thirty-volume solution; and, with the temperature of the solution raised to blood-heat, the diffusion of the gas through the cellular tissue would oxidize the blood rapidly, and tend to give new force to the circulation.

In regard to peroxide of hydrogen, it is well to recall the important fact that the remedy we have had before us has about it the peculiarity that it is a purely natural remedy, that it is not toxic, and that with the exception of the danger of producing by it gaseous accumulation in the blood, under some conditions of its use—a danger which can be avoided—it is free of all risk. In its remedial application, too, there is no complexity as to its action. In every instance that which it effects is oxidation: for asphyxia it is oxidation, for breaking up pus and exudations it is oxidation, for destroying infectious and fetid organic secretions or excretions it is oxidation.

Noble is enthusiastic about the remarkable qualities of peroxide of hydrogen. Its importance as a pus-destroying agent is becoming more and more recognized. In general, in order that antiseptic or germicidal agents may be used effectively, it is absolutely essential that all foreign material, discharges, etc., be first removed, so that the agents may be brought in direct contact with the surface or tissue to be acted upon. It is also true that the power of penetration of the antiseptics in common use is slight, so that they are reliable only in combating strictly superficial septic processes. This is particularly true of corrosive sublimate solution, which, by its action on albuminous discharges, forms an impenetrable covering which prevents the solution from coming in contact with the tissues to be acted upon. In this respect the action of the peroxide solution is essentially different. It attacks, disintegrates, and oxidizes all discharges and dead tissue with which it comes in contact, thus favoring its contact with and action upon underlying tissues. Moreover, the products of its activity escape as water and carbonic acid gas.

In cleansing the hands, preparatory to an operation it is very useful. In cleansing the abdominal wound preparatory to removing the sutures, the peroxide solution has proved efficient. If any pus has formed in the track of the drainage-tube or of any of the sutures, the peroxide solution will remove it more efficiently than any other agent.

Straus and Sanchez, of Toledo, have reported experiments which they had made to determine the susceptibility of the uterus, shortly after parturition, to various germs.

They first, at intervals varying from three hours to three days after delivery, removed with sterilized platinum wire from the uteri of animals small portions of the uterine contents, with which they made cultures in various media. These cultures remained uniformly sterile showing that normally the uterus contains no pathogenic bacteria after delivery.

They then curetted the uterine cavity of animals killed immediately after delivery; the matter thus obtained yielded no microbes when stained and microscopically examined. Sections of the uterus, made soon after parturition, revealed no microorganisms. They conclude, therefore, that the uterus after normal birth contains no pathogenic microorganisms.

It was then determined to test the normal, recently emptied uterus, regarding its susceptibility to pathogenic microbes. Accordingly, cultures of the bacillus of anthrax, the bacillus of septicemia, the staphylococcus aureus, and the microbe of chicken cholera, were injected into the cavity of the uteri of living animals; control experiments being made by injecting the same bacilli hypodermatically into other animals. Intrauterine injection of microbes in healthy, recently delivered animals was without result, with the exception of the bacillus of chicken cholera, which proved rapidly fatal to the small animals experimented upon.

The experimenters conclude that ordinarily the parturient uterus contains no pathogenic microbes, nor is it susceptible to the presence, in its cavity, of most of the infectious germs. The idiosyncrasy exhibited to the microbe of chicken cholera is inexplicable, but shows that each species of animal possesses especial susceptibility to a particular germ or species. The contrast be-

tween the fatal effects of the hypodermatic injection of microbes and their presence in the uterine cavity, illustrates the readiness with which the organism is affected when the circulation is directly entered, and the power of resistance to infection possessed by the glandular tissues.

THE URINE AND KIDNEYS IN HEALTH AND DISEASE.

BY A. N. ULRICH, M.D.

THE toxicity of the urine has been studied for many years with varying results. Some years ago Adduco made extensive analyses of the urine of a large body of soldiers before and after long periods of marching. From this data he came to the conclusion that there is in normal urine a toxic base composed of sulphur. The salts of this substance present a reddish-brown appearance with a sharp bitter base. This observer has not reported on the physiological effect of these bodies. Bouchard claimed as far back as 1884 that he could reproduce cholera by vaccinating with certain principles from the urine of cholera patients.

The occurrence of microörganisms in the urine has long been studied.

The occurrence of sarcinæ has been reported in a case of diabetes, associated with catarrh of the bladder; the fungi were seen to be a regular constituent of the urine, and were not influenced in any way by the variations in the excretion of sugar. They formed a whitish sediment covering the bottom and sides of the vessel in a solid layer. Some time ago it was definitely discovered that the bacillus of typhoid fever is excreted by the kidney and may be collected from the urine. In anthrax, tuberculosis, glander and pyemia the specific organism has been recovered from the urine. It is probably true that the ability of these bacteria to pass through the kidneys is dependent upon the appearance of some lesion in this organ. In the form of an infectious nephritis. There is a practical lesson in this fact, that such urine should be rendered harmless before it is thrown away.

The question of the discovery of the typhoid bacillus is one which has been under consideration of many observers for many years, but recently many reports have been made upon the subject for example, Richardson was able to find the typhoid bacillus in the urine of nine cases out of 38. The bacilli were present in large numbers and practically pure culture, appearing in the later stages of the disease and persisting into convalescence. With this there was nearly always found casts and albuminuria. This showed the importance of disinfecting the urine of typhoid cases.

While normally and theoretically no bacteria are to be found in the urine, nevertheless its discharge through the urethra is accompanied by its impregnation with a variety of bacteria, nearly all non-pathogenic.

Urine of unusual colors occasionally falls into the hands of the practising physician. There was reported some time ago in the medical journals, a case in which the urine had the color of a weak solution of permanganate of potassium. After much study the physician found that this discoloration was due to an aniline in a curacoa cordial which had been drunk by the patient during the previous evening, in connection with a considerable quantity of alkaline waters. There are three separate coloring materials in the urobilin series, one normal, one pathological, and a third, known under the pleasant title of urohematophorphyrin. The normal urobilin is probably the incomplete oxidation of a biliary pigment, while the pathological form is probably derived from hematin, while the third form occurs in those patients in whom there is an extensive destruction of hemoglobin, such as Addison's disease, cirrhosis, typhoid fever, etc. By making a large series of analyses of healthy adults, Berlioz has made a table of the average composition of normal urine.

If we regard uric acid as a product of incomplete metabolism towards urea, this table is interésting, for it shows that the average male, as a result of his higher physical activity presents in the form of urea a larger proportion of completed tissue change than the more sedentary female.

According to this authority the relation between uric acid to urea is one to forty, while Haig, in cases of uric acid diathesis, makes the proportion of one to thirty-three. This writer does not believe that any food will increase the formation of uric acid above its normal relation to urea, but that such foods as cause increased acidity of the blood, produce diminished uric acid excretion, and increased retention, therefore he does not believe in this diathesis, that meats can be taken with impunity, and therefore he depends largely upon vegetable foods. Carrying up this theory he advises the ordinary alkalines, as increasing the solvent power of the blood. Phosphate of sodium and the salicylates he recommends especially as flushing the liver and spleen as well.

Poels, reporting on the pathological anatomy of calculous kidneys, says that whenever a calculus is formed within the parenchyma or the pelvis of a kidney the peritoneum is often the seat of an inflammatory process, showing adhesions between these organs and neighboring viscera. Again a purulent inflammatory process may be lighted up and, communicating with the surface, making a lumbar inguinal fistula. Communication has been established with other portions of the body, with the peritoneal cavity, the intestines, bladder, or even the bronchial tubes. Rarely do these organs preserve their normal size, being either enlarged or shrunken, the enlargement being due, sometimes, to true hypertrophy, to fatty deposit to collections of fluid or pus in the pelvis, the diminution being caused by a cirrhosis. Their color varies considerably from the relative degrees of fatty deposit, of vascular injection or of ecchymotic changes

Through the researches of Bempecchi and Thayer it is known that albuminuria is nearly always present in pernicious estivo-autumnal infections and is frequently observed in the milder tertian cases. Ewing reports (*American Journal of American Sciences*, October, 1901) a case in which the clinical symptoms showed the existence of acute hemorrhagic nephritis with partial suppression of urine, giving clear microscopical evidence of the extreme massing of the malarial parasites in the kidney which contradicts the common theory that the renal lesions are due to some toxic substance eliminated by the kidneys, and not to the localization of parasites in the renal capillaries. This author believes that the microscopical examination of the kidneys of fatal cases of malaria show three main types of acute renal lesions.

1. Acute degeneration of toxic origin, often reaching a degree in which exudation of blood serum into the tubules is added. This lesion is responsible for the vast majority of the cases of albuminuria in malaria.

2. An extreme form of acute degeneration, with focal necroses, numerous hemorrhages, and exudation into the tubules of blood serum and blood pigments. This

lesion is seen in cases of hemoglobinuric malarial fever, and it has not yet been found associated with an excessive number of parasites in the capillary vessels.

3. Massing of parasites in the renal capillaries, with extreme degeneration of parenchyma cells, multiple hemorrhages, and exudation of blood serum into the tubules. It seems certain that this type of lesion can occur only in severe estivo-autumnal infections.

There is anatomical evidence that in the pernicious estivo-autumnal cases the three types of lesions may be variously combined, but no good reason for believing that with the benign tertian infection occurring in this latitude any other than the first type can exist.

In a case where the urinary examination pointed to contracted kidneys, and this change was found post-mortemly, the organs were also enlarged and the seat of a large number of small cysts filled with clear fluid, probably of secondary formation. Another case of unquestionable secondary origin is mentioned by Commandeur, where the kidneys were hollowed out by a number of cysts of variable size, and the pelves of the organs each contained a number of calculi.

Slight dilatation of one kidney, in a small boy. The child had been wetting his clothes at first only in day, but later both during day and night, and complained frequently of pain in the back and lower part of the abdomen. On examination with a sound, under an anesthetic, the bladder walls were found tough and resistant; while the patient was anesthetized circumcision was performed, the physician suspecting his tight prepuce as an element of cause in the case. The child died, several days later, from the effects of the operation upon his already weak constitution, and at the autopsy the bladder was found very much diminished in size, with thick walls, and with ureters and kidneys as above mentioned. The constriction at the mouth of the ureter, from the overgrown connective tissue in the bladder-wall, was probably the point of origin of the hydronephrosis.

Hydronephrosis has been reported in such a case as the following: a woman, aged forty-two years, who had for six or seven years presented symptoms referable to such a condition. In 1884 she had submitted herself for the relief of intense pains in the right flank shortly afer an intense metrorrhagia, and on examination a large amount of decomposing blood was found retained because of incompletely-perforated hymen. The blood having been cleared out, pus was found to be passing from a small opening in the right side of the uterine cervix, and this was treated by antiseptic solutions for some time until the purulent discharge ceased. In 1887 she again had an acute attack of renal pain, accompanied by uremic symptoms, from which with appropriate care she recovered. In 1890 another attack, with a relative anuria and with uremic symptoms, occurred, and the physical symptoms of a hydronephrosis became manifest. Lumbar nephrotomy was performed, but little urine was withdrawn, and in a few days the woman was dead. At the autopsy it was found, that there was but a single kidney—the left—and this was enormously enlarged; the ureter, pelvis, and calices were dilated, and uterus was found to be bicornuate, the left uterine body pressing upon the ureter.

Hydronephrotic kidney has also been reported by Coates in which the obstructive cause was a small branch of the renal artery, which crossed the ureter a short distance from the insertion of the latter into the pelvis, causing an angle in the course of the ureter and producing obstruction. As the pelvis and the upper part of the ureter became more and more dilated, the constriction became more marked and the condition more permanent. The opposite kidney was very much hypertrophied, indicating that it had been performing double function for a long time. He also calls attention to the existence, in the museum of the Western Infirmary of Glasgow, of two specimens of hydronephrosis in which the cause was the angular insertion of the ureter into the pelvis of the kidney, above the apex of the pelvis; such a cause is denied by certain authorities. Rapidly developing hydronephrosis has suggested a localized peritonitis, and, for a time, the diagnosis was uncertain. A sudden sense of yielding in the abdomen, followed by profuse micturition and the disappearance of the tumor, led to the determination of the existence of a hydronephrosis, and subsequent examination revealed the fact that the affected kidney was a movable one. The latter condition was regarded as the underlying etiological factor, although it is quite possible that the movability was developed in consequence of the increased bulk and weight of the organ. This case occurred in a woman of thirty years of age, married and the mother of several children. The uncertainty of diagnosis, and the sudden disappearance of the abdominal tumor after a feeling of breaking within the abdomen, with the passage of large amounts of urinary fluid, led to the narration of a very similar instance by Bernard, occurring in a man of forty-two years of age. A case or intermittent hydronephrosis was found after extirpation, by Israel, to be due to a reversal of the beginning of the ureter of several centimeters' extent. The ureter was imbedded back of the pelvis, the mouth of the latter pointing back and upward, the ureter then curving into the proper direction. Hydronephrotic kidney has been operated on as in the following series. The first was in a young girl, and had existed for some years, having been aspirated several times. At operation the kidney was laid open and drained; no calculus was discovered, but the ureter was found much dilated. No good resulting from this operation, some months later the kidney was removed, recovery ensuing. The second occurred in a house-maid with movable kidney. A primary operation—stitching the kidney in place to prevent kinking of the ureter—proving of no value, the kidney was removed, with result in recovery. The third case was an intermittent one, in a boy of nine years, following, with a number of other disturbances a severe injury from being run over; it had been tapped several times, but regularly reappeared.

Renal abscess presents the following symptoms: painful micturition, pain in the region of the bladder and right kidney, loss of flesh and strength, anorexia, constipation, pyuria, and the necessity for frequent micturition at night especially. On local examination the kidney will be found slightly enlarged and tender; on making an exploratory opening, the kidney incised, the pus evacuated; and as there had been relatively little kidney-tissue destroyed the surgeon anticipated the healing of the abscess without necessitating nephrectomy. In these cases of pyonephrosis, as well as any other condition demanding incision into the renal parenchyma, an unnamed writer urges that incisions freely made by means of a bistoury, from the convex surface of the organ toward the pelvis, are the least perilous, the bleeding being easily controlled by simple pressure of the cut surfaces together, and in conditions of asepsis healing readily after suturing the edges of the wound together. A tendency to heal under these circumstances is rapid,—one in a kidney relatively normal, the other in a tubercular organ. Experiments upon the normal kidneys of the lower animals show a marked tendency

to heal on the part of such renal incisions. Peripheral abscesses occur occasionally as reported by Brunt in a man of sixty-four years, who from early life had complained of lumbar pains, and had had neuralgic pains in the back of the limbs from time to time. Years before he fell down striking his left side. A year later severe pains in the left flank appeared, followed by a fluctuating tumor, extending from the crest of the ilium nearly to the spinal column, from which pus was evacuated. The patient sank rapidly and finally died in an emaciated, weakened condition. The left kidney was found surrounded by pus, very much diminished in size, and contained several calculi. It is believed that these calculi were the point of origin of the disease, leading by their irritation, together with pyogenic infection, to the determination of a pyonephrosis; this latter gradually extended beyond the kidney and produced the lumbar abscess, resulting in compression and destruction of the kidney, and in the formation of the lumbar sinus mentioned.

An interesting experiment, confirming the opinion that circulatory disturbances are an essential feature in these so-called physiological albuminurias, is recorded by Casaretti, who obtained curious results in several cases by applying bandages about the limbs. The symptom was of the ordinary cyclical form in all the cases, but the application of the bandages caused it to completely disappear, and that in a short time, and in a case of permanent albuminuria from nephritis it decidedly lowered the intensity of the condition. The excretion of urea was also reduced coincidently.

The alternation of the renal circulation must be very slight indeed to thus rapidly modify or abolish the symptom. It must be slight to be thus easily and rapidly influenced, and one can easily comprehend a failure to recognize its existence and understand how an albuminuria, dependent upon such slight alteration, should come to be viewed as not abnormal. The instances where changes of posture from a horizontal position without albuminuria to the erect induces the appearance of albumen. A curious case was brought by Moritz before the St. Petersburg Medical Society, occurring in a lad of seventeen years of age, where the symptom apparently was in some manner due to an attack of angina. The albumen appeared regularly in the urine when the erect posture was assumed but disappeared when the patient was kept in bed at rest. No casts were discovered; and the author, being led to look upon the condition as due to altered conditions of pressure in the renal circulation, kept the patient continuously in bed for a protracted period, with subsequent recovery. Another similar case is mentioned by Lunin, occurring in a twelve-year-old boy who, in early life, had had rickets, pertussis, and double catarrhal pneumonia. In 1885 he began to excrete an increased amount of urine, and as diabetes mellitus was known to have occurred in the family the urine was submitted to examination, with the result that albumen was found, but no sugar. Frequent subsequent examinations established the fact that the urine of the periods of rest was free from albumen, the latter appearing regularly, however, as soon as the patient arose from bed. No casts, except one questionable one, were found. In 1889 febrile malady was encountered, the fever continuing about 10 weeks; during this illness, the patient being kept in bed, no albumen was to be found in the urine, but as soon as he arose it reappeared. Gradually the little patient lost his bright and eager appearance, his interest in his studies waned, and he became quite dull, although physically not much altered.

Another case belonging in the same category is reported by Herringham, occurring in a young male, aged 13 years, of a generally relaxed, flabby habit, in whom position exercised an evident influence upon the excretion of albumen. So, too, the case published by Long, recently referred to in this magazine, of a woman whose urine, taken at times, of activity during the day, showed albumen, but, taken after a night's rest in the horizontal position, was free from all trace. When she was pregnant it was noted that gradually the albuminuria diminished and disappeared, to reappear after delivery. The enlargement of the uterus and other elements arising during the period of pregnancy, acting to the increase of the vascular pressure and the increase of vascular tonicity, probably would account for the disappearance of the phenomenon. From a careful observation of several cases of intermittent albuminuria, it may be considered that this form of the condition is not so much dependent upon posture, diet, or excretion as upon the question of actual warmth.

THE CLINIQUE.

PRACTICAL POINTS IN THE TREATMENT OF PEDICULOSIS AND SCABIES.

FREQUENTLY the practising physician is called upon to treat these unpleasant conditions and for the very reason that they are unpleasant to the average member of society he must be able to quickly remove the condition or lose the confidence of his patient. It is well to know that vinegar or dilute acetic acid will kill nits quickly and effectively. For the three forms of pediculosis head, body and clothes, the so-called Persian Insect Powder or the powdered flowers of the pyrethrum, carneum or roseum is excellent; wipe dry the affected part, dust the powder over it and rub in thoroughly and every louse will die at once. When used for clothes lice it is well to use a blow-pipe. It is a well-known working rule that what destroys the louse will not kill the nit so this operation must be repeated in a few days.

Again in applying medicines to the surface of the skin it is well to remember that there is danger of poisoning from absorption; for example Auche in the *Journal de Medicine de Bordeaux* reports a case of tobacco-intoxication from the external use of an infusion of tobacco to the entire body to destroy pediculi pubis. Six ounces of tobacco to four pints of water were used and rubbed in well; after the second application the patient began to experience nausea and finally the most toxic effects of tobacco poisoning, lasting for several hours.

The statistics of the American Dermatological Association for a period of years shows that the ratio of cases of pediculosis to the whole number of skin cases reported from Boston is a little less than 5½ per cent., from New York a little over 3 per cent., from Philadelphia a little over 1½ per cent., from Chicago less than 3 per cent., and the same ratio in Canada.

The three varieties of pediculus, pediculus capitis, the pediculus corporis and the pediculus pubis, occupy definite regions of the body and do not generally encroach upon each other's poaching ground, the pediculus capitis confining itself to the hairy region of the scalp, the pediculus corporis to the body, and the pediculus pubis to the pubic region and axilla. They may get off their own proper ground in going from case to case, but they soon get back, for they are very rarely seen except in their own region. Pediculus capitis is the most fre-

quent, occurring in 500 cases out of 914 reported of pediculosis, 81 males and 419 females; of the 81 males 34 were boys, 5 or under, 25 between 5 and 10, 19 between 10 and 15, while only 3 were above 15. In the females 74 were 5 or under, 172 between 5 and 10, 116 between 10 and 15, and the remaining 57 cases are scattered along, diminishing in number as years advanced.

It is very doubtful if any lesion of the scalp is produced by the bite of the pediculus capitis, yet if present in any number they will cause a very decided cutaneous eruption. It is hard to diagnose from an eczema of the scalp, varying in intensity from a congested scaly form to an acute pustular one, according to the number of the parasites present or the susceptibility of the patient to irritating influences. Of course situation and distribution are great helps.

Ova or nits are always present as characteristic pear-shaped semi-transparent bodies attached to the shaft of the hair. If only a few lice are seen they are generally attached to the hair from one to one and a half or two inches from the root, invariably with a sharp end toward the root, that is to say, the egg is laid by the louse with its head pointed toward the scalp. When the nits are very thick they will be laid nearer and nearer to the root, sometimes almost touching one another. In women or girls with long hair they may be found on the shaft farther toward the end of the hair; but they are frequently within two or at most three inches of the scalp.

Cutaneous irritation is most apparent in the occiput and crown, If the patient has been infested for some time a papular eczema may be found on the back of the neck, and even extending down on to the shoulders. The post-cervical glands also are enlarged at times, especially in the case of children. This enlargement of the glands may be the reason for the mother to seek her doctor.

To diagnose pediculus capitis is easy, although it may be sometimes impossible to find the lice. It is a good rule to remember that eczema capitis in the back part of the head, especially in children, may be safely ascribed to pediculi. The treatment includes not only the destruction of the pediculi, but the devitalization of their nits and their removal. An ointment of carbolic acid in the strength of one to sixteen or one to thirty-two made with ung. petrolii, not only destroys the pediculi but sterilizes the ova. If the whole scalp is a mass of crusts some tar preparation diluted with cod-liver oil is excellent for preparative treatment. It is best to tell patients that they have lice in order to direct the treatment and insure strict cleanliness afterward. Combing with a fine-toothed comb dipped in vinegar will remove the nits, but it should not be done until the scalp has lost its tenderness.

The pediculus corporis should be called pediculus vestimentorum, as it lives in the clothing, is larger and somewhat longer in proportion to its breadth, and shows a blackish tinge on the back, to which is probably due the vulgar name of "gray back." It is second in frequency; the number of cases recorded being 337 to 500 of pediculosis capitis. It is more common among males, 196 of Greenough's cases being males and 146 females. Also curiously the relative age of the patients is also reversed, both sexes being more liable to pediculosis vestimentorum as they grow older. The pediculus corporis produces a papule by its bite, causing intense itching, from which the patients often excoriate themselves deeply. Yet it is hard to find the parasite upon the epidermis, while its ova are also laid upon the clothing. This makes the diagnosis at times difficult. Even when quite plentiful the pediculi are not always easy to find, hiding in the seams of clothing. The nits are generally more conspicuous, although smaller than those of the pediculus capitis and are attached to fuzz of woolen clothes, or on the threads of seams. Small dark minute spots on the white underclothes show the feces of the louse. The distribution of the cutaneous irritation of the body is characteristic. Those parts where the body is brought into most intimate contact with the clothing, as the shoulders, in persons with a full chest, the breast and the waist or girth, the outside of the arms, anterior aspect of the thighs, etc., are apt to be most affected. Congested papules, more or less excoriated deep-furrows, caused by digging into the epidermis with the nails, excoriated patches and even furuncles are seen, but never the eczema of scabies. Pigmentation may occur and furuncle on the thighs have been started inguinal adenitis in some cases. In the aged pediculosis may be confused with pruritus senilis.

To treat this condition disinfect the clothing; to do this it is necessary to expose it to the degree of heat at which albumen coagulates, to kill the lice and also to sterilize the ova. In hospitals ovens can be used. In private practice the woolen garments can be ironed along the seams and creases while the underclothing should be boiled. A carbolic wash is enough in most cases as an application to the body. Severe lesions must be treated as symptoms note.

Pediculosis pubis is the rarest form of all. All but one of Greenough's cases were males, between the ages of 15 and 30. The pediculus pubis is found on the body where there is stout curly body hair like that of the beard. From the pubis they wander up the median line of the abdomen, reaching the sternal hairs and the axillæ, or down the anterior aspect of the thighs to the lower legs and even on the hairs on the dorsum of the phalanges of the toes as well as up to the beard, mustache and eyelashes. They are always at the root of the hair, and apparently clasping the shaft with their anterior claws. The ova is about the same size as that of the pediculus capitis but rounder; attached to the root end.

When severe, especially if the severity has been caused by irritants, emollients, rest and tepid bathing should first be employed, as the case yields, a mild solution of the bichlorides, balsam of Peru or solution of boracic acid.

The pediculus capitis is generally carried from school or from the play ground by exchanging caps, and at home by the use of brushes, combs, etc., in common. Among the better classes horse cars, sleeping cars or railroads, etc., is the cause. Servants frequently contaminate the children of a family.

Pediculus capitis is confined to the lower classes or to persons of respectability living in reduced circumstances, wearing cast-off clothing and herding together in cheap lodging houses and police stations. In the better classes it is due to the use of public conveyances, public water closets and travelling. Pediculus pubis is supposed to be nearly always conveyed by actual contact in sexual intercourse, but in private practice this is not so; dirty water closets in my experience is the commonest cause.

Impetigo contagiosa, scrofulosis and pediculosis may be confused for each other. The eruption of pediculosis capitis is like that of impetigo contagiosa, the difference being the closer resemblance of the pediculosis eruption to eczema and its favorite locality at the edge of the hair behind and extending downward toward the shoulders. By lifting up the back hair and carefully examining under it pediculi or at least ova may almost always be discovered. Pediculosis capitis has been treated by

internal remedies for months and years for eczema or scrofulosis.

Poor children tortured by nocturnal itching with the eczematous eruption which shows itself as in scrofulosis about the eyes, nose, mouth and ears may make a diagnosis of scrofulous eczema. This eczema disappears when the lice are destroyed confirming the diagnosis.

The first indication in the treatment of scabies is to remove the cause. If the eczema, which appears, is cured, the insect will still continue to irritate the skin and the disease remains. A remedy must be used which is able to destroy the insect and its eggs. Unfortunately, such a remedy may produce an eczema or dermatitis, therefore it is well to use the remedy which will destroy the insect and its eggs most quickly and at the same time irritate the skin the least. Some medications for scabies cause eczema, and it is hard to know when the scabies ceases and the eczema begins; but the treatment of the scabies is only completed when the eczema produced by it disappears. The milder form requires only an application of an efficient remedy, but if the disease is old and the accompanying eczema is intense then several applications are necessary. Kaposi considers the following the best remedy: ℞ Flr. sulphuris, ol. rusci, aa ptes. xx; sapon, vir., xl; pulv. creatæ alb., v; adipis, ptes., xl. —M. This salve is brownish black. Every furrow is to be injected with it. Naphthol, recommended by Kaposi, is a valuable remedy, used when the smell of tar is objected to. It takes the place of that ingredient in the prescription, as follows: ℞ Naphtholi, ℥i, saponis viridis, ℥iv; alipis, ℥vj; pulv. cretæ albæ, cii.—M. The patient is rubbed with this without any previous bath, which might irritate the skin. After the application the patient should lie in bed for a few hours between woolen blankets.

Fournier treats scabies by a thorough application of soap, followed by a full bath. Then the following ointment is well rubbed in over the whole body: ℞ Sulphuris sublimat, ℥j; sodii carbonat., ℥iv; glycerine, ℥ij; gum tragacanth, gr. v. This is followed by a second bath; the personal and bed linen should be carefully laundried, and gloves which have been worn should be burned. Emollient baths and the use of powdered starch or of glycerite of starch will be of service; bichloride of mercury has been used; it is efficient but very dangerous, so it is well to avoid it.

ENVIRONMENT AS A CAUSE OF AGUE.

Matthew D. O'Connell, M.D.R.U.I., Royal Army Medical Corps (*Lancet,* September 6, 1902), says that cases of fever clinically identical with malaria occur in the blood of which parasites could not be found after repeated search before quinine had been given. The meteorological environment found where such cases occur, and indeed in all malarial climates, increases the amount of water in the blood of those exposed to its influence by impeding elimination through the skin and lungs (evaporation-heat loss) and through the kidneys. There is known to be increase of water in the blood of those suffering from ague (Liebermeister). Increase of water in the blood increases metabolism—*i.e.,* heat production—and produces a rise of body temperature (Payne). As environment thus causes diminished heat loss from the body and increased heat production within the body, it is plain that it causes pyrexia. This pyrexia must be of intermittent variety, as the environment which produces it is of intermittent intensity—*i.e.,* undergoes diurnal variation. Elimination of water from the blood (sweat) in ague reduces the temperature to normal. Increase of water in the blood produces poikilocytosis, pseudo-parasites, liberation of hemoglobin, extensive destruction of red blood-corpuscles, and melanemia. An extreme degree of these changes obviously leads to hemoglobinuria. Increase of water in the blood produces enlargement of the spleen. Removal from the environment that produces increase of water in the blood usually cures ague. All treatment of ague which is efficacious reduces the amount of water in the blood. From these facts the writer thinks it not unreasonable to conclude that those cases of ague or intermittent fever in which no parasites can be found are demonstrably due to the environment under which they arise.

New Method of Spinal Anesthesia.—The well-known unfavorable sequelæ of spinal anesthesia have led many to relinquish it. Kozlowski (*C'tlbl. f. Chir.,* November 8, 1902; *Med. News*) describes a new method, which he finds very satisfactory and without these drawbacks, of securing this form of anesthesia. He soon became convinced that the symptoms were due not so much to the bad effects of the cocaine or tropacocaine, but rather to the amount and kind of fluid injected. In the usage of most operators the menstruum consists of water. Since there is not a less irritating drug than tropacocaine, he concluded that the other factor—the water—was probably the cause of the trouble. He therefore determined to try the result of injecting tropacocaine itself in cerebrospinal fluid. With the very first case he was convinced that this is an easy procedure, rapid and convenient. He takes a sterilized, dried graduate, containing about 0.05 grams of tropacocaine in powder form. A needle is then driven into the spinal canal, between the second and third and fourth lumbar vertebræ, and the cerebro-spinal fluid allowed to drip upon the tropacocaine. After a little shaking the drug mixes itself well in the cerebrospinal fluid, of which five grams are allowed to escape, thus forming a one-per-cent. solution of the tropacocaine without any addition whatever of water. The mixture thus formed is drawn into the syringe and immediately injected into the spinal canal. The tropacocaine which he used is Merck's directly from the bottle, without any special sterilization. If it is desired to sterilize it again, hot air might be used or preferably an alcoholic solution made of it and permitted to evaporate slowly in a glass dish in order to form the crystals again.

Hypnotism and Dentistry.—Hypnotism is not likely, we think (says the *British Journal of Dental Science*) to be received with favor as an aid to the dentist's art. M. Moirand, a well-known Paris dentist, has, however, just described one case in which it was resorted to with complete success. A young man of seventeen presented himself with a decayed molar in the left side of the upper jaw, accompanied by alveolar periostitis. M. Moirand decided that extraction was necessary, but his patient refused to submit to the operation. His father proposed that he should be taken to M. Berillon, a specialist in hypnotism, and this was done. The hypnotist as the result of the interview simply told the young man that he must bear to M. Moirand a message to the effect that he must make an injection of cocain and take out the tooth without causing the slightest pain. The patient returned to the dentist's and sat down quietly in the chair. M. Moirand pretended to inject the cocain, took up his forceps, and removed the tooth. This proved to be a difficult task, and considerable force had to be employed, but the patient remained completely motionless, and seemed entirely insensible to pain.

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THE FUTURE OF OUR PROFESSION.

THE trend of thought in the medical world, for the last decade especially, has been along the scientific lines of investigation, looking to the causes of disease and its prevention, and to a therapeutics based upon well proved facts about which there can be no dispute. The unfolding of the germ theory, the dual action of drugs, and sepsis, whatever may have been their origin, now belong exclusively to no school, but are accepted as the cardinal principles, in a greater or less degree, of the entire profession throughout the world. The richest contributions to an advanced and scientific therapeutics have been found in the laws of hygiene and in those subtle forces of nature, light, heat and cold, and the various forms of electricity, to the proper understanding of which we are indebted to a great extent to laboratory work. The laboratories of the army and navy during the past few years have opened a new world in their investigations as to the cause and prevention of disease. Along this line so rich in promise of practical results, some of our moneyed philanthropists are contributing their millions to the establishment of laboratories for medical research as to the cause and prevention of disease.

It will be remembered that a few years ago Mr. John D. Rockefeller, moved by the death of a favorite grandson, contributed a large sum to the establishment of the Rockefeller Institute of Medical Research. In connection with this institute he now proposes to establish in this city a laboratory which will be the greatest and most complete in all its parts for medical research of any in the world. The ground has already been purchased at a cost of nearly a million of dollars, and the institution will be endowed with an ample fund to carry out its work on the largest and most complete scale. Mr. Rockefeller will establish similar laboratories in connection with the university of Chicago. The Henry Phipps Institute, for the study and treatment of tuberculosis, with an endowment of a million dollars, will soon be an accomplished fact. Other institutions along this line are being established in different parts of the country, and to them as great centers of scientific thought, with ample pecuniary provisions for carrying out the most minute scientific investigations, will be attracted the leading scientific minds of the country, and the discoveries produced will naturally be accepted as a working basis by the entire medical profession. In view of these facts and those to which we shall hereafter refer, we submit that the proposition made at a recent meeting of the Medical Society of the State of New York, meet with respectful and careful consideration. However important a part these different organizations have contributed to the progress of medicine, and none can doubt the value of their work, may it not be a question if at the present time, when so little difference exists as to general principles, more good might not be accomplished by the union proposed. Late in the '70's an effort was made by a few advanced men in the State Medical Society to establish a State Board of Examiners, before which all new practitioners should appear before receiving a license to practice in the State. This movement was strongly opposed by nearly all the old school institutions in the State, and only passed by the union of the three dominant systems of medicine, each system in certain chairs being entitled to an examiner representing that school. Out of this movement came the effort to change the code of ethics. It was proposed at first to have a new code, but on further consideration it was found that a total abolition would be acceptable to the majority of the State Medical Society. The result of the union of the three systems which led to the organization of the State Board of Examiners has been productive of the best legislation in medical and sanitary matters of any State in the union. On all essential matters the three systems have worked harmoniously since that date. The result of this advanced movement in medical co-operation was to abolish by the State Society the iron-bound code of ethics, which had hitherto shut out all affiliation with the eclectic and homeopathic systems of medicine. This action left the State Medical Society with no representation in the American Medical Association which still retained the obnoxious code. Notwithstanding, since that period strong efforts have been made in the American Medical Association to abolish the old code of ethics and bring the association in "rapport" with the State Medical Society. The efforts have not been successful. The American Medical Association now has branches in nearly every State and county, and numbers about 30,000 members. The New York Branch of the Association and the New York State Society proposed to unite, retaining the distinctive name of the latter, but assuming the obligations of the former, including the obnoxious code of ethics. The State Society declined such union, on the ground that it would be in violation of the principle for which it had contended, and which has been of such vast benefit to the entire medical profession. The State Medical Society, in view of the united action of the three schools, which in all matters of legislation have been in entire harmony, suggest a still further union, in the uniting the three schools in one, or a reorganization of the three schools

under the charter of the State Medical Society, which is the oldest society and endowed with certain charter rights of the utmost importance. This new organization would give independence of thought to all, alike. This action would, of course, exclude officially all sectarian names, all working with honesty and sincerity of purpose in lines of scientific investigation for the best interests of medical science. In this connection we might say that the State Medical Society was organized in 1806, and that this union would close the century with a spirit of harmony and progress which would constitute an era in the medical world.

STATE CARE OF CONSUMPTIVES.

THE attention of the public and the profession has recently been called to the establishment of Municipal and State Hospitals for the treatment of consumptives. There are two hospitals in the city appropriated to that specialty. The Seton Hospital at Spuyten Duyvil, one of the excellent Catholic Institutions, has 200 patients. The building is large, the food excellent, and the medical treatment all that modern science could suggest. Under the direction of the Commissioner of Public Charities a department in the Metropolitan Hospital was established last year for the special care and treatment of tuberculous patients in the city charities, under the name of the Tuberculosis Infirmary.

Although the name is grewsome enough, an air of hopefulness and cheerfulness pervades the Tuberculosis Infirmary from cellar to garret, and while the cases of most of the patients are desperate, forty-seven per cent. of them have been discharged in the last year, either greatly improved or with the progress of the disease arrested. Heretofore it has been the custom to regard those of the city poor afflicted with consumption as marked for death, and beyond giving them the prescribed hospital fare and such things as the rules require little attention was paid to them.

In the Tuberculosis Infirmary the patients spend their time as if they were being entertained. They have nutriment seven times a day, and are encouraged in games and various exercises.

The temperature of the hospital is seldom above 60°, eight degrees below that which is usually maintained. The infirmary occupies two buildings, which were abandoned more than a year ago, when all the inmates were taken to Wards Island. In the main building, which is used for the men, are 297 patients, and in the women's infirmary are 97 more. When the contemplated improvements are complete there will be room in the infirmary for nearly 600 patients.

The report of last year shows that there were forty-two fewer deaths in the city than the year before. Mr. Folks thinks the diminution of the city death rate was in a measure accomplished by the work of the infirmary, which last year had fourteen hundred patients in its charge.

Patients rise at half-past five o'clock in the morning, and at six o'clock they have a breakfast of cereal, bread and butter and coffee, often with the addition of beefsteak or poached eggs. Eight o'clock is the hour of cod liver oil and whiskey or sherry, and at ten o'clock the joyous cry passes through the corridors, "eggnog!" Dinner, which is served at noon, consists of soup, beef or mutton, potatoes, some other vegetable and bread. Cod liver oil and plenty of sherry mark the hour of two in the afternoon, and at three o'clock all hands are piped into the corridors for beef tea. Eggnog is served an hour later. A supper, consisting of pudding or preserves, a soft boiled egg, bread and butter and tea, is given at five o'clock, and three hours later, just before bedtime, hot or cold milk is furnished. The patients are warmly clothed, and the regulations are that they must spend two half-hours in the open air and as much longer as they can stand. Many of them are out five hours a day.

It is a concensus of opinion with those who have given the greatest attention to consumption in its various forms that nutritious food as much as can be assimilated, an abundance of sunlight, and cool, pure air, of as even a temperature as possible, are essential factors in the care and treatment of this class of patients. These conditions exist in a marked degree in the Metropolitan Tuberculosis Infirmary.

There is no question that in all our hospitals consumptive patients should be excluded from the general wards, and special accommodations provided for them, but whether State and Municipal Institutions of an entirely independent character are wanted is a matter for grave consideration. In reference to this subject Dr. F. O. Donohue, Chairman of the New York State Commission of Tuberculosis, says: "There are 50,000 sufferers from tuberculosis in New York State, who would have to be provided for in case segregation was attempted. In order to carry out any such plan compulsory notification would be necessary, and the authorities would have to be clothed with powers of compulsory removal and detention which in the present state of public opinion and of our knowledge of the disease would not be tolerated."

Thus far although tuberculosis is to a certain extent curable in its early stages, no specific cure has been discovered. Still owing to a better understanding of the disease and a more careful observation of hygienic rules there has been during the past twenty years a decrease in mortality of 20 per cent. If some specific could be discovered for the destruction of the tubercular bacillæ and the elimination of the toxin poison from the system, the sunshine, pure cold air, and ample nutrition might be sufficient in most cases to restore the vital force and give a new lease of life.

Along this line of investigation some notable advances have already been made, which speak well for ultimate success in the no distant future.

In addition to the discovery of Koch within the last few months, a new tubercular serum has been discovered

in Paris, which promises excellent results. Prof. A. Landerer, of Stuttgart, gives in the January number of the *Journal of Tuberculosis*, the results of several years' experience with hetal or cynamic acid, given by hypodermic injection. He thinks the experimental, pathological and anatomical proof of the action of hetol on tuberculous processes has been established in a most positive manner, and its use in many cases of marked benefit. Prof. Getsinger, formerly of the University of California, has combined from the vital principle of essential oils a preparation to which he has given the name of hydrocene, which has been used in several of the hospitals in Paris and in this country with great success in destroying tubercular bacillæ. Whether it will be uniformly successful can only be determined by a larger experience. The recent prominence which formalin has attained in septic poisoning in puerperal fever has led to the hope that maybe it might be of equal benefit to the septic poisoning of other diseases. In this connection a recent case reported by Dr. Roller, of Philadelphia, is of special interest. He says: "When I was called in to see the patient she had been given up to die by the attending physician. She was in the advanced stages of tuberculosis, and with the complication of acute puerperal septicemia, her condition seemed hopeless.

"She had been delirious for several days. Her fever was at 104⅗, her pulse was almost too rapid to be counted and the marks of death had already settled on her face.

"I injected into the median cephalic vein of the left arm 500 cubic centimetres of a solution of formaldehyde gas in steine water, the proportion being 1 to 1,000. In twelve hours her temperature had fallen below 100, and her pulse to ninety-six. She spoke sanely enough to us all.

"At the end of eighteen hours her temperature was entirely normal, and her pulse remained between 100 and 110. The next three days the temperature and pulse rose, being worse between the hours of two and four in the morning. On the fourth day the operation was repeated, with the same result. At the end of two weeks, the patient suffered virtually no pain and no delirium. Her temperature and pulse were very much better than they had been.

"Now, twenty-one days after the first operation, the woman is sitting up, and she tells me that she feels well. I scarcely dare to hope that, in her case a complete cure can be effected, but I have every reason to believe that the formalin solution will cure tuberculosis before it has reached the last stages, and that it will prove of great relief even in the most extreme cases.

"In my opinion the pus micro-organisms in the lungs are responsible for most of the symptoms of consumption. Their toxines break down the cell tissues and form a favorable culture medium for the growth of the tubercle bacillus. They are responsible, also, for the high temperature in late consumption."

SELF-PROTECTION OF THE PHYSICIAN AGAINST INFECTION.

WHILE the medical profession is always interested in sanitation as related to the community, it is proverbially careless of its own welfare, perhaps less from unselfishness, than from the indifference bred by familiarity with danger. Yet, even from a distinctly impersonal standpoint, the development of disease in a physician or in his immediate family is more of a menace to the general health than when occurring in most other members of a community.

Instructors in clinical medicine, in bacteriologic and other laboratories, and especially those in charge of dissections and necropsies, should both by precept and example, sedulously guard the medical student from the dangers of infection and should oppose to their utmost ability, the spirit of bravado so often prevalent. In the old days—not so very old in point of years—cadavers were preserved mainly by cold, facilities even for ordinary cleanliness were often lacking, and the student ran a considerable risk of inoculation with syphilis, tuberculosis, and certain other infectious diseases, due to animal and vegetable parasites of the most diverse kinds. Malaria, trichinosis and uncinariasis, as well as other diseases of this type of infection, may very likely have been inoculated during dissections. With chemically preserved cadavers and with abundant facilities for cleanliness, disinfection and closure of cuts, these dangers are now minimized.

As for necropsies and operations on infected individuals, rubber gloves, caustic, collodion and care in maneuvres, should be esteemed as important as the provision of instruments in good condition, mechanically and aseptically.

In the examination of sputum, feces and urine of doubtful nature, the utmost care should be observed to prevent the scattering of infectious particles. All tests should be made over a glass or other impervious and readily disinfected surface, and a strong solution of zinc chlorid, mercuric chlorid with hydrochloric acid or some similar active disinfectant, should always be at hand. If infectious, the materials examined should be covered with an abundance of disinfectant and allowed to stand for some time before being thrown into a sewer or, a fortiori, into a privy vault or other place of deposit, in the country. The bottles in which such materials have been brought should be broken, after disinfection, as rag peddlers make a business of collecting bottles from ash barrels. Sputum, on account of its tenacious consistence, is particularly dangerous. In spreading between cover glasses, a drop of tubercular sputum is likely to get upon the wrong side of the glass and infect the fingers of the investigator. It is a safe rule not to smoke, eat or wipe on a towel or use a handkerchief, during such examinations, until the hands have been thoroughly disinfected. Many utensils can be disinfected most readily by boiling water; cloths, papers and cotton, etc., may be burned, taking care that im-

perfectly consumed particles are not conveyed to food in a range or into hot-air pipes in a furnace.

Against the ordinary, air-borne diseases, the physician can not adequately protect himself. In hospitals and in private houses, after the diagnosis has been made, the clothing may be protected, to some degree, by the use of a linen duster or other long coat that can be washed. The physician should insist on washing his hands with soap and water at the close of every visit to a highly infectious case, including typhoid and tuberculosis, when there is any possibility of coming in contact with infectious discharges, as after touching the patient or his bedding—thus including all but the mere "looking in" on a patient. Some lessening of the probability of infection may be secured by keeping the hair cut close, and by free ventilation and the simple precaution should be observed, whenever practicable, of visiting contagious cases last, and of turning off obstetric and surgical cases and susceptible children, to a colleague. In cities, the care of actively contagious cases should be relegated to specialists, if necessary, under municipal pay.

As patients with scarlet fever, measles, smallpox and other highly contagious diseases, occasionally visit physicians' offices, and as tubercular patients often expectorate carelessly, and as other patients are likely to be infested with vermin; carpets, draperies and upholstery should be avoided in the office and waiting room, so far as possible, and the entire furnishing should be with reference to ready sponging.

Cuspidores require careful attention and, on account of possible errors in marksmanship, some prefer to dispense with them altogether, and to provide a special receptacle for patients who require them. On the other hand there must be considered the danger of the use of a register or of some dark corner by a patient whose emergency or sense of delicacy (?) prevents his asking for a cuspidore.

An important factor in avoiding infection, is the establishment of good powers of resistance. The doctor should be well fed and warmly clothed. The former means a liberal varied diet, well cooked and without too much attention to physiologic theory. It also means regularity of meals and leisure to enjoy them. Except in the greatest emergency, the physician should not expose himself to contagion, on an empty stomach. Physicians who are too busy to eat, should remember that there are plenty of others who are not busy enough to eat as well as they should. While bodily warmth can be maintained partly by underclothing, a more rational way is to protect against cold when exposed to it, not when in a warm room, and to avail one's self of overcoat, gloves, rubbers, cape, heaters and protected vehicles. Overfatigue is a prominent factor in the predisposition to infection.

Finally, as an individual of considerable influence, especially in small communities, the physician should set an example by having his own home in a sanitary condition and should be active in securing municipal and village cooperation in regard to water supply, sewage disposal and local cleanliness.

ENDOWING MEDICAL SCHOOLS.

ON condition that $1,000,000 shall be raised by the trustees of Rush Medical College before July 1, 1903, the trustees of Chicago University, it is announced, have agreed to receive the medical school as an organic part of the university. The trustees of Rush are confident that the required amount can be obtained within the time specified, and to this endowment, as we understand, the trustees of the university are to add, when the consolidation is effected, no less a sum than $7,000,000.

Our medical schools have hitherto been practically unendowed. There were in the United States in 1900, 151 medical schools, with 2,674 professors and 25,213 pupils, but their aggregate endowment was only $2,236,087, one-tenth the endowment of the theological seminaries in the same year. The schools rely upon tuition fees for their current expenses, and secure the services of their professors, not by paying them what they are worth, but by offering them great opportunities to increase their practice. No professor in a medical school is expected to give all his time to his teaching, as are professors in other schools. Nor does any medical school render aid to its pupils on the same liberal scale as is done in literary colleges. Of the schools in this country nearly one-half are departments of colleges or universities. In this respect, however, as Professor F. S. Lee points out in a recent address, America is still far behind Germany, for in the latter country no medical school exists except as part of the larger institution. The advantages of such a connection are obvious. Apart from the material benefits that are likely to accrue to the school, and the prestige granted it in the educational world, there is the atmosphere of a higher culture, a more scientific spirit, and less utilitarianism, which is breathed by instructors and students alike, and which cannot fail to make the conditions broader. In the larger of the German university schools a portion of the teaching body consists of men who do not engage in medical practice, but give their whole time to their specialties in teaching and research. The outcome of this must be to broaden and deepen the scientific basis of medicine. Let us now quote from an editorial in the *Philadelphia Press:* "If Chicago sees organized a great medical school in which the professors are fully paid, give all their time to their teaching and can work independent of tuition fees, remitting these to promising students, exactly as is done in university work, it is a mere question of time when historic schools like those in this city will find themselves distanced, unless they also are provided with endowments. With far-sighted wisdom the university of Pennsylvania has for some time been working in this direction. Harvard

has already secured an endowment for its medical school. Jefferson College has been moving in the same direction. If Philadelphia is to remain a centre of medical research, endowment for its great medical schools must come at once and with the same liberality which endows higher education in other fields."

We are ignorant as to what steps are being taken toward placing the work of medical education in this city upon an entirely new basis and under entirely new conditions of competition, but presume that, anyhow, such a movement will not be long delayed. Surely, the commercial and financial metropolis of the western world will not consent that her medical schools shall keep lagging in the rear of a "freshwater" university—one, moreover, whose upstart growth has been fostered mainly by gifts from a New Yorker. It must be that Columbia will soon be enabled to emulate, or even, in a becoming degree, to surpass the example of Chicago.

THE USE OF CHLOROFORM DURING LABOR.

IN a recent communication Dr. T. W. Parkinson, of London (*Med. Press and Circular*), advances a plea for the general recourse to chloroform in obstetrical practice and defends the drug against the insinuations and accusations of which it has been the object for so many years. As a matter of fact there is very little trustworthy clinical evidence in support of the allegation that chloroform, when properly administered, in any way predisposes to post-partum hemorrhage. Dr. Parkinson affirms that he has never seen a case in which this occurrence was associated with the rational administration of chloroform, and probably his experience agrees with that of obstetricians in general who are in the habit of using chloroform. It is an invaluable means of obtaining relaxation of a rigid os uteri, a condition which so commonly protracts labor, and this effect is produced with comparatively small doses. It is not denied that if chloroform anesthesia be pushed to a surgical degree cessation of the pains may be brought about, although it is often observed that the rest thus afforded to the jaded uterus is followed by the resumption, after an interval, of steady regular contraction.

It is a mistake to postpone chloroformization until quite the end of labor, for no other reason than that its maximum benefits are thereby frustrated. The arguments in favor of the routine use of chloroform are based on its rational administration. It should not be given too early—that is to say, while the pains are still bearable—and under ordinary circumstances it is unnecessary at any stage to push the anesthesia to the surgical degree. It is particularly in the obstetrical use of chloroform that the advantages of a regulating inhaler are most manifest. A fraction of the drug can be pumped into the mask with every inspiration, and with this inhaler the proportion of chloroform vapor can be increased or diminished with the greatest ease and certainty. Should it become necessary to apply the forceps or perform any other obstetrical operation, the anesthesia can be forthwith increased without any fuss and without exciting apprehension on the part of the patient, and in the event of a perineal rupture the damage can be made good before consciousness is allowed to return. We should require very cogent and well-supported reasons to induce us deliberately to withhold these advantages from suffering women, and so far it does not appear that valid arguments have been advanced against habitual resort thereto.

THE ROLE OF ARSENIC IN LIFE.

ACCORDING to a writer in *La Nature* (Dec. 13), arsenic, that terrible poison, is neither more nor less than a constituent element of the tissues of all living beings, vegetable or animal. Its presence in the body is absolutely necessary to some of the most important vital processes. Without arsenic no life is possible; this purveyor of death is one of the great supporters of life. Such is the apparent paradox affirmed by Prof. Armand Gautier as the result of physiological and clinical observations.

Arsenic, in fact, exists normally in man and animals, in the skin and its appendages, the thyroid and mammary glands, the brain and the bones. In the other organs it has been found only in slight traces. This organic arsenic is eliminated by the epidermis, the skin, the hair, and the horns in animals.

Whence comes this arsenic? Sea-water, the great generator of the lower forms of life, is a veritable bouillon of arsenical cultures. The provision of arsenic on the earth's surface in general is enormous, and will be sufficient for ages for the consumption of living beings, who also constantly restore it. The arsenical cycle has thus been established by the eminent chemist. First the sea takes it from eruptive rocks and dissolves it. Numerous marine plants, as well as fishes, take it up, and transmit it to man. Land and plants also take it from the soil formed by the detritus of old rocks and pass it on to other plants and to animals.

When it has once entered the organism, the arsenic localizes itself in certain groups of organs, and plays a very important part there. Just as phosphorus is the exciting element of the functions of cellular nutrition, arsenic appears to be the exciting ferment of the still more important functions of sensation and reproduction.

We see then that the old physicians who prescribed arsenic to tone up the organism and stimulate its functions, and at the same time to save its own substance, did good without knowing it. They thought that they were bringing about a simple stimulation of the organism by means of a poison administered in feeble doses, and they were right; but they were doing still more—they were furnishing to the organism one of its necessary constituent principles of which it was in need.

Thus, from all these different points of view, the discovery of M. Gautier is of the liveliest interest. It introduces a new idea into the chemistry of living beings.

It tells us of the universal part played by arsenic; it may also be fertile in various applications to therapeutics, perhaps even to hygiene, mental as well as physical, since to absorb assimilable arsenic is to enrich the brain, increase its vitality, and improve the psychic functions. Half a century ago, Moleschoot's exclamation—"no mind without phosphorus!"—made a great sensation among his contemporaries. Now we can say with even more reason, "no thought without Arsenic."

SPECIALISM AND POST-GRADUATE SCHOOLS IN NEW YORK.

DR. J. M. Matthews (The eminent rectal specialist and former president of the A. M. A.) is quoted as follows in the *Medical World.*

"It would be difficult to name a dozen specialists in this great city. I mean men who really 'do what they say'—limit their work to any one branch in medicine or surgery; and what an injustice this is to the man who really does. But they seem to be suspicious of each other, and go in for what they can get. The man who limits (?) his practice to surgery here often delivers his neighbor's wife of 'a fine baby boy' just to keep in *practice.* The G. U. specialist (?) treats scarlet fever as a side issue, and the throat man 'looks up the rectum in order to make both *ends* meet.' And so runs the world away, and the *devil* take the hindmost, here in New York. Well—Louisville is good enough for me.

"There can be no doubt but that the intention was good in establishing post-graduate schools. Verily, every man who has practiced medicine for a score of years has felt the necessity of 'brushing up,' and the post-graduate was the thing. Yet every one has but to 'look in' on one of these to be convinced that a great harm is being done—men from all parts of the country are here for the purpose of becoming specialists, and that, too, in the short space (or long) of six weeks.

"I had occasion today to have my hair cut. During the time that it required to do the job I gained some valuable information from my tonsorial friend. I said to him, 'you people should have schools in which could be taught this very essential art.' He replied, 'why, we have; but dont you know that there are men who really think that they can learn to cut hair in six weeks? Think of it.' And at the same time I was thinking of the hundreds of medical and surgical specialists in the country who had been made such in *six weeks*—think of it—six weeks."

All pure jocularity, *of course!*

TOBACCO A MENTAL ASSISTANT.

ACCORDING to Henri de Parville, in the *Journal des Debats* (*Public Opinion*), there is no doubt that tobacco assists intellectual labor. Under its stimulation ideas flow easily and quickly group themselves. MM. Claparede and Isailovitch have recently demonstrated the action of tobacco on the association of ideas, the experiment consisting of associating as quickly as possible a word to one which was shown written upon a card, the response being made by pushing a button attached to a chronometer, which indicated the duration of the intellectual operation.

The sittings took place every day at the same hour for 17 consecutive days, each sitting lasting one-half hour. At every sitting there were presented 150 words to associate, and on the even days the subject smoked two cigarettes of Turkish tobacco during the time taken up with the first 100 associations. The results were not only very clear, but exceeded by a great deal that which might have been expected from delicate experiments which are frequently influenced by imperceptible causes. The average duration of an association was 50 to 70 hundredths of a second, and when the subject smoked the duration of the association was smaller, namely, five to 10 hundredths per second, this being the regular condition during the 17 days. The action of the cigarettes was thus manifested by a constant diminution in the association time, in other words. it was proved that tobacco assists intellectual work.

SALT IN CANCER.

DR. JAMES BRAITHWAITE, of Leeds, England, in an article recently published in the *Lancet,* attributes cancer to the excessive use of salt and calls attention to the fact that it is most abundant in those who make a large use of pork. This statement is by no means correct, as the history of individual cases show that it is confined to no particular kind of diet, and is just as frequent among those who eat but little meat of any kind as among those whose diet consists principally of meat. If, as observation seems to show, that cancer is a parasitic disease, the probabilities are as with all other diseases, especially tuberculosis, the body is prepared for the entrance and development by any influence or habit which lowers vital resistance, and hence lessens the powers of the tissues to defend themselves. In this as in every other disease of parasitic origin, the great prevention is undoubtedly the keeping up of vital force by proper physical development, judicious diet and habits of living by means of which all the organs of the body will be enabled to perform their vital functions. The vital force in every healthy individual is sufficient to resist and overcome most diseases of parasitic origin, if proper attention is only given to those rules through which alone a healthy life can be obtained.

FERMENTATION WITHOUT ALCOHOL.

IT HAS hitherto been considered an established fact that there is no fermentation without alcohol. In intoxicating drinks, such as beer, wines, etc., in the fermentation which takes place, the sugar or glucose which exists in the grape or apple juice and malt are decomposed into carbonic acid and alcohol. Dr. Pitoy, a French scientist of great reputation, claimed that this

universally accepted theory is false, and that the mysterious fermentations are the work of certain micro-organisms which he has succeeded in isolating and providing with a separate existence. This new birth on being introduced into the liquid to be fermented, fattens and swells to the bursting point, each point of which as it is thrown off becoming in its turn an active cell. It is claimed this method instead of decomposing glucose and sugar in the proportion of one part of carbonic acid to two of alcohol, as by the old proceeding, causes the latter two parts to assume the form of a non-alcoholic substance. It is therefore inferred that beers, wines, etc., submitted to the new fermentation, will emerge as temperance beverages, containing no alcohol, but with all the nutritive properties of grape and apple juice.

A SHORTER COLLEGE COURSE.

WE are glad that a halt has been called by leading educators and business men to the tendency within the past few years to increase the length of the preparatory course for an entrance into professional life. So much preparatory work is now required of the student that he is well on in years, some of which might better be directed to the practice of his profession or courses of study in the line of his life work. In addition to the arguments already advanced, Dr. Charles W. Eliot, President of Harvard University, in his reports to the trustees, advances another which by some might be considered less important, but which has certainly a strong bearing upon the subject. From statistics taken from six classes of Harvard University covering a period of 25 years, President Elliott reaches the conclusion that the highly educated part of the American people does not increase the population at all, but on the contrary, fails to reproduce itself. This is due in part he thinks to the postponement of marriage of educated young men, a postponement which the protracted education now prescribed for men who enter the learned and scientific professions makes almost unavoidable. It is a question worthy of grave consideration if in our zeal for a higher education we may not have crowded the list of studies with matter unnecessary to produce the desired results. As this subject has been taken up by the leading universities in this country and in Europe, we may hope for a remodelling to a certain extent of our educational courses eliminating much that is useless for the more practical, in that line of scientific thought necessary to prepare one for a life of usefulness and success.

Grape-juice and the Typhoid Bacillæ.—The Chicago Board of Health after testing the action of various fruit juices on the typhoid bacillæ, state that while lime juice, apple juice and the juice of the grape-fruit, all had a more or less inhibiting effect on the growth or action of these bacillæ, bottled grape-juice gave the most conclusive results. The advantage of the grape juice is that while it is as nutritious and generally as easily digestible as milk, one per cent. is sufficient to effect the bacillæ, a quantity so small as not to disturb the feeble digestion.

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LEA'S SERIES OF MEDICAL EPITOMES. An Epitome of Physiology for Students and Practitioners of Medicine. By Theodore C. Guenther, M.D., of the Norwegian Hospital, Brooklyn, and Augustus E. Guenther, B.S., formerly Assistant in Physiology in the University of Michigan, Ann Arbor. In one 12mo volume of 250 pages, with 57 engravings. Cloth, $1.00, net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1903.

The established facts of Physiology as developed at the present day are given in this little treatise in a clear and concise form, illustrated by engravings when necessary. The work is intended most especially for students, but will also prove of value to the general practitioner, who may wish to post himself on the most recent findings on the subject.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and especially prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose, and Throat, and other Topics of Interest to Students and Practitioners by leading Members of the Medical Profession throughout the World. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U. S. A., with the Collaboration of John B. Murphy, M.D., Chicago; Alexander D. Blackader, M.D., Montreal; H. C. Wood, M.D., Philadelphia; T. M. Rotch, M.D., Boston; E. Landolt, M.D., Paris; Thomas G. Morton, M.D., Philadelphia; James J. Walsh, M.D., New York; J. W. Ballantyne, M.D., Edinburgh, and John Harold, M.D., London, with Regular Correspondents in Montreal, London, Paris, Leipsic, and Vienna. J. B. Lippincott Company, Philadelphia and London. Cloth, $2.00. Volume 4, Series 12th.

The present volume contains articles of great value from some of the leading and most advanced thinkers of the world upon Therapeutics, Medicine, Neurology, Surgery, Dermatology, Ophthalmology, with biographical sketches of Horatio C. Wood, William W. Keen, and Guy Hinsdale. The volume concludes with a monograph of a hundred pages on the blood in health and disease, with a review on the recent important works on this subject. The monograph from its fullness of information forms a very important contribution to medical literature, and is richly worth the cost of the entire volume. All the articles are illustrated with well executed plates, part of them in colors, when necessary to convey the full meaning of the text. The *International Clinics* improves with each succeeding volume, and places in the hands of the general practitioner the ripest thought of the most advanced thinkers in our profession.

PEARLS OF HOMEOPATHY.—By M. E. Douglass, M.D., Professor of Materia Medica and Mental and Nervous Diseases in the Southern Homeopathic College, Baltimore. Boericke & Runyon, New York, Publishers.

This little work of 231 pages gives the most characteristic symptoms of the leading drugs in homeopathic therapeutics. It will be found of great use to the busy practitioners of this class in refreshing the mind with the prominent indications for a drug, the full picture being supplied by larger works. Bound in flexible leather. Price $1.25.

A COMPEND OF DISEASES OF CHILDREN, especially adapted for the use of medical students. By Marcus P. Hatfield, A.M., M.D., Emeritus Professor of Diseases of Children N. W. U. Medical School, Physician to Wesley Hospital, Home for Crippled Children, Chicago Orphan Asylum, etc., etc. Third Edition, thoroughly revised with a colored plate. Philadelphia: P. Blakiston's Son & Co., 1903, pp. 241. Price 80 cents.

A book of this class to be of service, must be prepared by an experienced teacher, and such is the case with this, it is just enough, it is excellent.

HOW TO SUCCEED IN THE PRACTICE OF MEDICINE. By Joseph McDowell Mathews, M.D., LL.D. Author of "Mathews on Diseases of the Rectum," Professor of Surgery, Hospital Medical College, Louisville, Ky., etc., etc. Louisville: John P. Morton & Co., 1902. Octavo, pp. 215.

This volume is the outcome of the author's frequent talks to medical students in the colleges with which he has been connected during twenty-five years, and is most graciously and affectionately dedicated to his wife. The object of the book is to direct the young practitioner how to get on in the world, and the attempt should be appreciated by this class, and shown by an active demand for the volume. The text is classically written, interesting, instructive and sometimes amusing. The book should be read at least by every physician who desires to know how to succeed.

A POCKET TEXT-BOOK OF ANATOMY. By Wm. H. Rockwell, Jr., M.D., Assistant Demonstrator of Anatomy, College of Physicians, Columbia University, New York. In one 12mo. volume of 600 pages, with 70 illustrations. Lea's Series of Pocket Text-Books. Edited by Bern B. Gallaudet, M.D. Cloth, $2.25 net; Limp Leather, $2.75, net. Lea Brothers & Co.: Philadelphia and New York.

Like its companion volumes in Lea's Series of Pocket Text-Books, this work presents a compendious and trustworthy account of the most recent knowledge in its subject. While not intended to take the place of large complete volumes, such as Gray or Gerrish, it gives those facts of Anatomy which are essential to the student, physician and surgeon in concise, readily accessible form, and in clear, plain language, illuminated, where necessary, by excellent illustrations. Dr. Rockwell's long experience in teaching Anatomy has acquainted him with the exact needs of students, and the difficulties they meet. This manual embodies an earnest endeavor to furnish a safe and competent guide to the student, as well as a convenient and trustworthy reference hand-book for the physician and surgeon who may wish to refresh his memory.

PROGRESSIVE MEDICINE, VOL. IV, DECEMBER, 1902. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 412 pages, 54 illustrations. Per volume, $2.50, by express prepaid. Per annum, in four cloth-bound volumes, $10.00. Lea Brothers & Co., Publishers, Philadelphia and New York.

The concluding volume of 1902 begins with a remarkably thorough consideration of the most recent advances in the diagnosis and the treatment of Diseases of the Digestive Tract, including the liver, pancreas and peritoneum, by Dr. Einhorn. Dr. Bloodgood's section on Anesthetics, Fractures, Dislocations, Amputations, Surgery of the Extremities and Orthopedics is a thorough discussion of all these important topics, accompanied by a large number of valuable illustrations. Dr. William T. Belfield writes upon Genito-Urinary Diseases. Dr. John Rose Bradford, in the section on Diseases of the Kidneys, discusses very fully the many manifestations of renal diseases, their complications, and the most recent methods of treatment. The section on Physiology by Dr. Brubaker will prove of more than usual interest and value to the general practitioner. Dr. Harrington's chapter on Hygiene relates the wonderful results attained by the practical applications of recent investigations into the cause and prevention of such diseases as yellow fever and malaria. The Therapeutic Referendum presents the more important facts regarding the most recent remedies and methods of treatment.

SAUNDERS' MEDICAL HAND-ATLASES. Atlas and Epitome of Diseases of the Mouth, Pharynx, and Nose. By Dr. L. Grunwald, of Munich. From the Second Revised and Enlarged German Edition. Edited, with additions, by James E. Newcomb, M.D., Instructor in Laryngology, Cornell University Medical School; Attending Laryngologist to the Roosevelt Hospital, Out-Patient Department. With 102 illustrations on 42 colored lithographic plates, 41 text-cuts, and 219 pages of text. Philadelphia and London: W. B. Saunders & Co., 1903. Cloth, $3.00 net.

In designing this atlas the author has kept constantly in mind the needs of both student and practitioner, and as far as possible, typical cases of the various diseases have been selected. The illustrations are described in the text in exactly the same way as a practised examiner would demonstrate the objective findings to his class, the book thus serving as a substitute for actual clinical work. The illustrations themselves are numerous and exceedingly well executed, portraying the conditions so strikingly that their study is almost equal to examination of the actual specimens. The editor has incorporated his own valuable experience, and has also included extensive notes on the use of the active principle of the suprarenal bodies in the materia medica of rhinology and laryngology. The work, besides being an excellent atlas and epitome of the diseases of the mouth, pharynx, and nose, serves also as a text-book on the anatomy and physiology of these organs. It is most compact and still covers so much. The book can be heartily commended.

THE PRACTICAL MEDICAL SERIES OF YEAR-BOOKS, comprising ten volumes on the year's progress in Medicine and Surgery. Issued monthly, Vol. III. The Eye, Ear, Nose and Throat, Dec., 1902. The Year-Book Publishers, Chicago. Price of vol. $1.50. Price of set $7.50.

This volume is in keeping in editorial ability with the other volumes of the series. The entire set of ten volumes is the most convenient for reference and the most valuable in information of any of the year-books published.

—There were 5,527 strokes of lightning in this country in 1899, and they caused 563 deaths.

CORRESPONDENCE.

ICE BAGS IN PNEUMONIA.

Editors MEDICAL TIMES:

Treatment with the use of ice application, covering over one hundred cases of pulmonary inflammations, have, in the writer's opinion, demonstrated the fact that the proper use of the ice bag is an adjunct remedy, par excellence, reducing in a decided degree the otherwise high mortality of acute pneumonia inflammations, and checking the acute exacerbations of pulmonary tuberculosis in an often astonishingly short time.

For this purpose a specially constructed ice bag has been used, a "pneumonia bag," more or less heartshaped, with adjustable shoulder straps, a posterior smooth-surfaced wall, a front wall with its filling opening in its upper part, large enough to admit crushed ice, and closed by a watertight screwtop arrangement. From the lower end of the bag a discharge tube is attached, the distal end of which is placed in a basin below the patient's bed, when the bag is in use, thereby securing a *constant* and *uniform* effect of the ice application, the water being drained off as fast as formed from the ice.

The chest area of lung tissue involved is from the start and every 24 hours carefully mapped out, and the ice application made to correspond. A cloth, usually an ordinary towel, is placed between the bag and the skin, and replaced by a dry one as soon as found moist. The watertight screwtop arrangement, however, prevents leakage through the filling opening.

The patient's condition as to temperature, pulse and respiration, indicate when the ice application is to be intermittently or permanently discontinued. The condition of threatening collapse or the stage of resolution each demands its immediate removal. The internal administration of creosote carbonate in moderate doses, together with proper stimulation, is carried out at the same time.

P. A. AURNESS, M.D.

Minneapolis, Minn., Jan. 10, 1903.

MEDICAL SCHISM IN NEW YORK STATE.

AT the annual meeting of the Medical Society of the State of New York, Jan. 29, 1903, the committee appointed to confer with a similar committee from the New York State Medical Association, made a report which shows that those who have earnestly desired a reunion of the profession of the State must wait for some time longer.

Both the report of the committee and the general sentiment of the members of the Society, however, confirm the previous impression that has long been held, namely, that there is no very essential point of difference between the two organizations of the Regulars in New York State. It is true that the committee of the Society refused absolutely to adhere to the old code of ethics in regard to consultations with homeopaths. Entirely aside from any growing spirit of liberality, the Society combined with Homeopaths and Eclectics, nearly twenty years ago, for the sake of obtaining legislation to regulate medical education, which the legislators had repeatedly refused to grant till the medical profession, of various tenets, "got together." Without reference to the main issue of professional unity, an ordinary regard for business integrity demands that the Society shall not desert its allies of other schools, even in the interests of solidarity of the Regulars of the United States. As several other State societies or associations have made precisely the same combination as did the New York Society, for the sake of obtaining proper standards of medical education, without sacrificing their representation in the American Medical Association, and as members of the New York Association not only consult with men of other schools, but have actually elected Homeopathic physicians to membership, without demanding a formal renunciation of previously held opinions, it is evident that the issue between the two State organizations is rather one of technicality than of principle.

The method of organization proposed by the American Medical Association, and adopted at St. Paul, in 1901, so that membership in the county association implies membership in the respective State and the National body, was willingly accepted by the committee and, indeed, it seems not improbable that this system will be adopted by the State Society, of its own volition and without reference to its influence on medical harmony between the two State organizations.

The principal obstacle to reunion was the demand by the Association that the Society should abandon its old charter and, indeed, its existence, and that both organizations should unite under a new charter to form a new body, retaining the name "Society," but with sufficient change of wording to remove all possibility of doubt that the veteran society, with its honorable life of ninety-seven years, had died. The committee of the Society, with equal positiveness, refused to consent to any action which should sacrifice the continuity of existence, and in this attitude they were warmly supported by the general sentiment of the meeting. They, however, had already taken competent legal advice to confirm their contention that their present charter amply provided for the inclusion of the members of the Association on an equal footing, and for such changes in methods of obtaining membership or other matters, as had already been consented to.

While a purely sentimental desire to preserve an ancient organization should not stand in the way of harmony, there is a great difference between the sentiment that demands life and that which insists on death. The members of the State Association, under the present charter of the Society, would enjoy every privilege and would by no means be in the position of seceders to be taken back and reconstructed. As the legal counsel of the Committee of the Society pointed out, the maintenance of antiquity of organization is of equal value to every member, whether of the Society originally, or of the Society from the Association.

We are inclined to believe that the present sentiment precludes a formal union of the two State organizations and would point out to the Society the advisability of abandoning any direct attempt toward this end and of seeking affiliation with the American Medical Association, on its own initiative. The marvelously complete plan of professional solidarity already adopted by the latter, has advanced to a point at which the National body recognizes the need of going a step farther and of removing from its code of ethics any prohibition which renders any personal, therapeutic opinion, a barrier to cooperation in the best interests of the entire profession. The American Medical Association also must remember that it is the legitimate offspring of the Medical Society of the State of New York, and that the withdrawal of the parent organization from its greater child, was in the interest of a greatly needed reform in medical education. Indeed, just as the New York Society originated the American Medical Association, so

has the act of the former, which led to the schism, afforded a precedent for the uplifting of the National profession. We may go farther and say that the radical action of the New York Society in cutting loose from the code of ethics was simply a step for which medical sentiment was, at the time, unripe, but which anticipated the gradual recognition throughout the country that absolute liberty of personal opinion is necessary, not only to the maintenance of professional unity, but to the reduction to a minimum of personal differences of opinion. The most bigoted adherent of the "old school" of medicine must admit that he only fosters what seems to him medical heresy, by keeping it at arms length. It is only a fortunate accident that the Opposition to Homeopathy did not establish a school of Allopathy as an opposite extreme, quite as widely separated in theory from the practice of the non-sectarian physician, and far more dangerous, from his standpoint, as regards the welfare of the patient. As it was, the "Regular" has always had to fight the appellation of "Allopath" applied to him by the Homeopaths whom he opposed, and adopted in good faith, by the laity who always have difficulty in understanding that discordant views are not diametrically opposite to each other.

The action of the State Association at Saratoga, last year, in insisting on the exclusion from the privileges of membership in the American Medical Association of physicians who had been accepted into the National body before the reorganization at St. Paul, and who had every reason to consider themselves in good standing, in spite of their refusal to join the New York Association, aroused much unfavorable comment among the members from other States and even among the adherents of the New York State Association. This exclusion was condemned in a meeting of the House of Delegates, and it seemed to be in especial bad taste, from the fact that overtures toward reconciliation had already been made by the New York State Society.

The present condition is such as to demand a consistent attitude on the part of every physician in the State of New York. Our own personal bias is plainly shown by what we have written, and we make no claim to occupy an impartial position. We are willing to grant that the Society may be wrong and the State Association right, but we cannot understand the attitude of a very considerable number of men who are in affiliation with both organizations and who are thus lending their influence to both sides of the controversy. Neither can we appreciate the attitude of Homeopaths who, without renouncing their former views as heresy, have accepted membership in an association whose very existence dates back to active opposition to the attempt of the State Society to bring together all physicians on a common footing. Unfortunately, we cannot understand, except on a cold-blooded financial basis, the attitude of physicians who commit themselves to the proposition that Homeopathy is an absurdity and that physicians of different opinions cannot even combine with propriety on general matters of professional education and polity, but who, nevertheless, will accept a consultation fee for meeting at the bedside, one of the men whom they would exclude from all formal fellowship. It would be better to sacrifice Society and Association alike, rather than the jewel of consistency.

—Columbia University announces a course of public lectures on Scientific Subjects to be given on sucessive Wednesdays at five P.M. at the College of Physicians and Surgeons.

RETROSPECTIVE THERAPEUTICS.

Should Fever Be Treated?—On this subject *Merck's Archives* for October has an editorial which concludes with the following statements: (1) Fever, or elevation of temperature, is a symptom of disease, not a disease *per se;* (2) though but a symptom, it may, after reaching a certain degree, produce, in its turn, great functional disturbances, or even organic changes, and thus prove directly or indirectly the cause of death or of great permanent physical or mental injury; (3) when the pyrexia is of a mild character—say between 100° and 102° F.—it should generally be let alone; (4) a temperature between 103° and 105° F. should always be treated—treated watchfully, carefully, but energetically; (5) antipyresis may not only obviate the bad results due directly to the fever, but may have a good effect on the course of the original disease. As to how fever should be treated—whether by hydrotherapy, coal-tar antipyretics, refrigerants, or cardiac depressants —that, as Rudyard Kipling says, is another story.

Red Sulphuret of Arsenic for Abscesses.—Dr. Henry H. Cook reports (*Detroit Med. Journal*) that he has met with the greatest success in treatment with the red sulphuret of arsenic for abscesses and pus formations. In one of his recent cases the patient was suffering extremely from suppurative otitis media. The incision had failed to heal properly, and the amount of pus from the ear and from the incision was quite large. Temperature was high and the suffering was so intense that the patient had to be kept under the influence of morphine for some time. The treatment consisted in administering one 1-50-grain tablet of the red sulphuret of arsenic three times a day the first day, two tablets three times a day on the second day and three tablets three times a day on the third day of treatment. Treatment was then discontinued for a day and then resumed as before. By this time the temperature had subsided and the patient was relatively so free from pain as to render the continued administration of morphine unnecessary. Within a short time the patient was able to sit up in bed; she was free from pain, and at the time of the report she was making an uninterrupted recovery.

The red sulphuret was also found to be of great value in treatment of furuncles and carbuncles in the above mentioned dosage. Pain is promptly relieved, temperature reduced and the general condition of the patient much improved within a short time. In cases in which abscesses appear in crops the same preparation is well-nigh ideal. One case is reported of a woman who had a crop of seven abscesses in the bend of the elbow. As soon as one set reached a certain stage of development another set appeared and the condition of the patient was rapidly growing serious. The administration of the sulphuret checked the growth, improved the condition of those already formed, and permitted a speedy recovery. This form of treatment is said by those who have tried it wholly to surpass in results the treatment by calcium sulphide.

New Sign of Pleuritic Effusion. Chas. L. Green (*N. Y. Med. Jour.*) describes this sign in the following epitome:

1. In unilateral pleural effusion the heart border corresponding to the opposite side shows a marked change in position as between full inspiration and full expiration, when the patient is sitting or standing erect.

2. This is easily demonstrated by percussion, sustained by the evidence afforded by inspection and apex auscultation, and absolutely confirmed if necessary by the fluoroscope.

3. Such a range of excursion does not occur in the normal chest or in those conditions likely to be confounded with pleuritic exudation.

4. The technic consists simply in percussing the free cardiac border in full inspiration and again in forced expiration with the patient in a standing or sitting posture and noting the change of position. The border will be displaced outward by the expiratory movement.

5. Percussion of the upper border of flatness posteriorly shows a well-defined rise of the fluid in full expiration coincident with the outward displacement of the heart.

The Serum Treatment of Malignant Pustule.—Lazzaretti (Monograph, Siena, 1902; *Brit. Med. Jour.*, Dec. 25, 1902; *Med. Age*) reports twenty-three cases of anthrax treated with Sclavo's serum. All were treated in the clinic of the University of Siena, and the diagnosis was in all cases bacteriologically confirmed. There was only one fatal case. This was in a man aged sixty, a drunkard, who had malaria and a severe syphilitic infection two years before. The necropsy showed interstitial nephritis with early cirrhosis, and a hemorrhage into the pedunculus cerebri; the infection was therefore not directly responsible for the fatal result. The other cases all recovered, some being very severe. The course of the disease was cut short, and the disfigurement caused by the pustules was but slight; locally, sublimate dressings were used.

Organic Extracts.—Dr. O. T. Thomas in the *Medical News* refers to the marked value of thyroid feeding in cretinism, myxedema, and operative myxedema as a proved fact. In exophthalmic goitre it has also been tried. He believes, however, that Graves' disease is due to a hypersecretion, and that the thyroid extract would be contraindicated during the continuance of the active symptoms. Clinically this position is borne out, as all the symptoms are increased during the activity of the disease. Certain cases, however, may be benefited by the extract, and his rule in regard to such treatment in Graves' disease is: If the patient is sleepy, apathetic, with but little palpitation, has no headache, and is putting on weight, thyroid treatment will probably benefit the case. As regards obesity he believes it is dangerous to use large doses or, persistently, medium doses of thyroid for the reduction of weight. The loss of weight continues for some time after the cessation of the treatment. If the thyroid is used to reduce the weight, the dose should be small and not too often repeated. The dry eczemas of old age can be due to the diminished secretion of the thyroid, and he has found that feeding thyroid to patients when the skin was in this condition has been of benefit. As regards the thymus gland he has found that in Graves' disease, in which feeding of thyroid would aggravate all the symptoms, good results have followed the use of the thymus, and this in repeated cases and repeatedly in the same case. In treating pulmonary tuberculosis he has for several years given thymus gland, and is prepared to say that combined with the best hygienic, hydrotherapeutic and fresh-air surroundings he can give his patient, thymus-gland treatment will always improve the condition. He recommends, as of all organic extracts, small doses, namely two- or three-grain tablets a day of Armour's preparation.

Urotropin in Typhoid Fever.—It is well known that in typhoid fever the bacilli are excreted in great numbers in the urine. Dr. E. Marx (*Bibliothek von Coler*, 1902, vol. XI, p. 51) regards typhoid urine as infectious in all cases until it has been proven germ free by a bacteriological examination. The premature dismissal of a patient who is still voiding urine, which contains typhoid bacilli is, from a sanitary standpoint, a grave danger. He regards the following prescription as a suitable one in the later stages of the disease.

℞ Urotropin ..... gr.lxxv
Aq. dest..... ℥v

M. Sig.: ℥ss t. i. d. for three weeks.

This will render the urine sterile, but the cessation of the bacteriuria can be considered complete only when no bacteria are found after the drug has been discontinued for some weeks.

Prof. T. Clifford Allbutt (*Brit. Med. Journal*, July 13, 1901) and Dr. Curschmann (Nothnagel's *Encyclopedia of Medicine*) also believe that urotropin is valuable in the urinary passages in typhoid fever.

Condurango for Cancer of the Stomach.—This patient came to our town on the train and was carried to the home of a friend on a stretcher, writes Dr. V. E. Lawrence, in *Alkaloidal Clinic*. If he had not cancer of the pylorus, then I do not know what he had. He certainly had most pronounced symptoms of that disease: he could eat nothing without producing the most severe pain, causing the bowels to move from its severity. I put him on the following: Fl. ext. condurango, 2 oz.; simple syrup, q. s. to 4 oz. Direct.: One teaspoonful three to four times daily. For pain in the stomach: Cocaine hydrobromate, gr. x; pepsin scales, dram 1-2. Put in capsules No. xxx. Direct.: One before eating.

He began to improve immediately, and in the course of a few months made a complete recovery. The cocaine was used but a short time. I found but one difficulty. The books speak of the uncertainty of the presence of the medicinal qualities of condurango. So I wrote to P. D. & Co. describing the case and asking for care in furnishing me with a good article. The first pound bottle of the fluid extract acted finely. I think 4 or 5 bottles were used in all, and we had the remarkable experience of finding that exactly every other bottle seemed to be useless. It was immediately exchanged for another which every time proved helpful. I mention this that no doctor may be discouraged by not always getting results. This case was handled 12 years ago; five years after I saw him fat and well. His age was 47.

I know of a lady, wife of a rich farmer. All the good doctors in the neighborhood had pronounced her case cancer of the stomach, with the usual prognosis. The husband was about to go with her to St. Louis, thinking that an operation might offer some hope, but on the eve of starting she became so ill that it was impossible to make the trip. Exactly the same treatment as above described was given her and she made a complete recovery. She was in good health eight years after.

I believe few doctors are acquainted with the virtues of condurango. It is certainly worthy of more attention than it has received. Anything which offers hope in this dreadful malady should not be passed by.

A New Dressing. Springer (*Centralbl. f. Chirurgie*) applies a thin covering of paraffin over a wound to prevent the possibility of adhesion of the gauze dressings, and has found it admirable for that purpose. It always retains its shape, neither melts nor becomes rancid, and is a good fit without adhering to the wound. A lump of paraffin is boiled in water for about ten minutes and then set in a pan of cold water to cool. When the gelatin has hardened and spread out in a thin layer on the surface of the water, the pan containing the gelatin is set in a pan of warm water until the paraffin is flexible. The sheet of paraffin is then cut and trimmed to the exact shape desired, perforated with a hot needle and transferred to the wound with forceps, the water surface down. The wound can be easily uncovered and cleaned, and it is shielded from all kinds of irritants. The gauze covering remains unimpaired. The light can also penetrate the thin paraffin sheet to exercise a beneficent influence.

Antitoxin in Diphtheria.—Kerley, in a paper read before the American Pediatric Society (*Archives of Pediatrics*, Oct., 1902), lays down the following rules:

1. With a visible membrane *inject at once*, and take a culture.
2. In croup inject if there is inspiratory and expiratory obstruction.
3. Patients should be seen at twelve-hour intervals.
4. Reinject in twelve hours, unless there is marked improvement.
5. Unless improvement is continuous, reinject at twelve-hour intervals until membrane disappears.
6. Dosage: Two thousand units to a child under one year, amount to be repeated if necessary; to a child over one year three thousand units under same conditions.

The Dietetic Value of Iron.—Probably no item in the entire list of the Materia Medica has acquired a more extensive or venerable reputation as a tonic than iron, says *The Dietetic and Hygienic Gazette.* It has been prescribed for "pale people" ever since medicine ceased to be pure mythology, mummery and moonshine, and began the use of tangible remedies.

Only a small percentage of it is required as an actual ingredient of the tissues, and the question long since arose as to its office and function in the organism, aside from the inconsiderable quantity utilized as building material.

Investigation to determine this important point has not been easy, but it has been persistent and successful. It has now been satisfactorily shown that it has at least three functions in the system.

1. Its direct office as building material. This is perhaps the slightest of its offices, if the small proportionate quantity required be taken into account, and yet, small as is the quantity entering into the composition of the tissues, that minute quantity is absolutely essential to the integrity of the glands, fluids and structures of the body, which show serious and immediate deterioration when deprived of it.

2. It is the oxygen-carrier and distributor, *par excellence*, of the organism. In this function it is entirely unique and can have no substitute. According to authorities of eminence, this office of the element is second to no other, although frequently overlooked or underestimated. Without it all the "fresh air" in the world is of little avail.

It not only distributes oxygen to the various tissues hungry for it, but within the tissues it also transforms passive oxygen into its active and vital form, ozone.

3. A tonic effect is claimed for it through its astringent action upon lax fibre. Pale and flabby muscles take on color, elasticity and tone under its influence. The arterioles respond to the normal stimulus, the heart-muscle receives new vigor, and the entire circulatory system a fresh lease of life.

Concentrated Foods.—There is a prevalent idea in the profession (*Med. News*) that foods can be concentrated. This thought finds its reflection in the advertising pages of medical journals in the highly colored claims of the manufacturers of prepared foods. The three main constituents, proteid, carbohydrate, and fat, are represented by such typical examples as meat, sugar, and fat. Meats may have their water driven off and be reduced to powder form; in this way their bulk is diminished to about one-fifth of their former quantity, but in order to be taken and absorbed they must have the water restored to them. Sugar is practically water-free, and represents the most concentrated form of carbohydrate available. Fats in the form of butter contain nearly 90 per cent. of carbohydrate. A greater concentration of fat than is contained in these natural products is not possible, and for the most part the manufactured food products contain far less units of energy than do the natural products. About the only purpose for which concentrated foods are useful is in furnishing the nutriment in a more palatable form, or else, if it has been acted upon by certain digestive ferments, in such a way as to facilitate its absorption. As a matter of fact, it is rare that predigested foods are required. If a stomach is capable of passing the food on into the intestines, there is such an excess of digestive capacity in most individuals that it will be dealt with in such a way as to permit of its absorption.

Pâté de Foie Gras.—In the last consular reports, the American representative at Bourdeaux, the Hon. Albion W. Tourgee, dispels some mistaken ideas concerning the method of producing that popular gastronomic delicacy, pâté de foie gras. It is hardly correct (at the outset) to refer to "foie gras"—as it is produced in Southern France, at least—as diseased. A fatted goose liver is no more diseased than the meat of an over-fed hog. Both are abnormal, and in that sense might be regarded as the product of insanitary conditions. The goose may for a time be confined by a tether a yard or so in length, fastened to a stake, beside which it waits with the healthiest appetite for its frequently supplied portion of American corn meal, which is the food chiefly relied upon for fattening. . '. The goose is not encouraged to take too much exercise any more than any other fattening animal. It is not fed for its health, but to incline it to take on fat. The result of this is to greatly enlarge the liver, which is the most valuable part of the carcass. But those who have seen the prize hog almost unable to stand erect, and kept from actual melting of its superabundant flesh only by frequent use of the hose, will readily perceive that if too much fat is a disease there are other forms of abnormal development just as objectionable as the much prized goose liver.

An invention of a new material has been offered to the German Reichstag, which will take the place of phosphorus in the manufacture of matches.

THE PROPOSED LICENSING AND REGISTRATION OF NURSES.

The tendency of all professions to secure legislation which shall compel all members to conform to reasonable requirements, has reached the profession of nursing and there is, at the time of writing, a bill before the legislative committee of the State, providing for the examination and registration of nurses. The bill is appended and we ask of our readers, a careful reading of and between its lines.

It is, perhaps, natural that the State Nurses' Association should ask the nomination of examiners but we find, at this point, a serious objection not only from the standpoint of the nursing profession but from that of medicine. From the nurses' standpoint, it should be explained that The New York State Nurses' Association is by no means, the representative body which its name implies. Those nurses who are opposed to this body claim that it exists in the interests of certain hospital alumnæ and of a certain nursing journal, that it has excluded at the beginning of its organization, many thoroughly qualified nurses who sought admission to it, and that it has been manipulated according to the lowest standards of political intrigue. This, we may interpolate—though the nurses with whom we have spoken are too polite to say so—may be taken to mean that the State Nurses' Association has followed the example of certain organizers in our own profession.

But, without reference to the merits of the Nurses' Association, of which we have no personal knowledge, the following facts show that it is not to be considered as authorized to speak for the nursing profession of the State: it is a comparatively small organization, representing, even by potential delegation, only about 500 of the 12,000 to 15,000 trained nurses of the State; those present at any regular meeting of the Association constitute a quorum; the selection by the regents of examiners from among the nominees of the Association is mandatory; the nominations are not in any way required to represent an assortment of interests or even of territory; no provision is made to allow the registration of veteran nurses already established in practice, except by the unanimous consent of the examiners who represent a body, at the beginning in avowed hostility to the majority of local associations of trained nurses now in existence in the State—or rather, the latter are in avowed hostility to the former.

From the standpoint of the medical profession, it should be pointed out that the personnel of the examiners should be definitely stated and, with no disrespect to the nursing profession, it should be considered that a nurse is not, like a physician or lawyer, a person who represents an independent occupation. In either of these professions, the graduate of a professional school is supposed to possess what, humanly speaking, is a complete training. A nurse, on the contrary, receives only such instruction as may fit him or her to act as an intelligent and skilled assistant to a physician or surgeon. The nurse is not employed directly by the laity but only on the advice, or at least, with the consent of the physician. The nurse's fitness for license should, obviously, be, to some degree, subject to medical approval; in other words, the representation of the medical profession should be explicitly provided by any bill of this character.

Again, the provision for revocation of a license, excellent as it may appear on the surface, should be most carefully guarded. The moral character of the nurse, as of the physician, is a condition for license. Everyone knows how purely formal this requirement is, with regard to the medical profession. It is obvious that a young woman, necessarily usually without a chaperone, brought into peculiarly intimate relations with patients of all descriptions, and compelled to a life which is lacking in the social restraints of most other women of similar intelligence and social standing, may very readily be made the target of malicious charges or even of misapprehension on the part of employers or others of eminently good position and acting in good faith, on circumstantial evidence which would reflect seriously upon a young woman living at home and having opportunity and lesiure to enjoy social diversion under the most conventional circumstances. A physician, seen on the street at unseemly hours, recognizing acquaintances of doubtful reputation, or frequenting disreputable neighborhoods, does so with impunity, not so much because he is a physician, as because he is a man. The laity often fail to realize that apparent infractions of ordinary conventional rules are absolutely necessary on the part of a nurse in the discharge of professional duty, and that perfectly innocent social diversions must be enjoyed at times and under conditions which her brief seasons of rest allow, or not at all. Moreover, any enmity which she may arouse either among her patients or among the medical profession, subjects her to possible calumny on the part of such mean spirited individuals as are not uncommon in civilized life. Thus, any system of hearing charges or even of allowing the same to be entertained, in any formal way and by a board which holds both social and professional standing within its power, should be subject to the closest restrictions and should be so hedged about with conditions as to preclude the preferment of charges, except in the face of the most positive evidences of unprofessional conduct.

Another most serious objection to the bill, in its present form, is that discrimination is made against the graduates of special and semi-private hospitals. If "general" hospitals were absolutely public and free from private control and if they were absolutely general in the clinical material presented for study; if, in addition, the nurse in training were simply a pupil, and her assignments were solely with reference to the perfection of her own training, this objection would be removed because the need of special and private hospitals would be done away with. But, the pupil-nurse is also an employee, her graduation from a "general" hospital is not a guarantee of training in all details of her profession, and hospitals of special or private nature, must depend largely upon the services of pupil-nurses; the graduate from a hospital of definitely limited scope should no more be discriminated against than the surgical or ophthalmologic specialist in medical practice. All hospital training schools are at present under State control and all provisions for registering and licensing nurses, should be as broad as the establishment of the hospitals themselves.

The present lack of license presents no very serious difficulties. Each nurse is graded, in practice, according to the standing of her school and, more particularly, according to her own personal ability. Legal control of the nursing profession is inevitable and it should be welcomed by nursing and medical professions alike, but hasty and ill-considered legislation should be condemned, and there is not, as yet, any general agreement upon the precise form which licensure should take.

NEW YORK STATE NURSES' ASSOCIATION. A BILL FOR THE REGISTRATION OF NURSES OF NEW YORK STATE.

1.—Any resident of the State of New York, being over the age of twenty-three years and of good moral character, holding a diploma from a training school connected with a State

Hospital for the insane, or, a legally incorporated training school for nurses connected with a general hospital, or, from a training school of a legally incorporated general hospital, giving a satisfactory course of at least two years, and registered by the Regents as maintaining in other respects proper standards, and who shall have received from the Regents of the University a certificate of his or her qualifications to practice as a registered nurse as hereinafter provided, shall be styled and known as a Registered Nurse, and no other person shall assume such title, or use the abbreviation R. N. or any other words, letters or figures to indicate that the person using the same is such a Registered Nurse.

2.—The Regents of the University shall appoint a Board of three Examiners, which shall be selected from those nominated by the New York State Nurses' Association, and with the advice of this Board of Examiners make rules for the examination of nurses applying for certificates under this act.

The regents shall charge for examination and certificates, such fee as may be necessary to meet the actual expenses of such examination, and they shall report annually their receipts and expenditures, under the provision of this act, to the State Comptroller and pay the balance of receipts, over expenditures, to the State Treasurer.

The Regents may revoke any such certificates for sufficient cause after written notice to the holder thereof and hearing thereon.

3.—On unanimous recommendation of the Board of Examiners the Regents may, in their discretion, waive the examination of any person mentioned in Section 1 above, who shall have been graduated before the passage of this act, and who shall apply in writing for such certificate within two years after the passage of this act.

MODESTY ON STILTS.

On reading a bill recently introduced into the legislature of this State, relating to the "Treatment and Care of Female Patients in Hospitals and Elsewhere, with the Protection of the Honor and Morality of such Patients," we are forcibly reminded of a remark of Mme. du Maintenon to a young lady who was posing in the line of excessive modesty: "Knowest thou not how much immodesty there is in thy modesty." If the bill was intended in earnest we can hardly imagine anything more insulting to the general public and to a body of legislators who are supposed at least to be cultured men and to possess some of the qualities of gentlemen. If the medical profession is so devoid of honor, so utterly debased as only to require the opportunity to bring into activity the most beastly traits of character, from which ladies can only be protected by the strong hand of the law, it is high time that the male portion of it should be excluded from decent society and the health of our wives and daughters cared for by their own sex. We quote the bill as it was presented to the legislature that our readers may see its thoroughly impractical character and how the highest skill, the purest and noblest motives, looking only for the good of the patient, are linked with the lowest form of beastly sensuality. The sooner the entire community can appreciate the fact that science knows no sex in its efforts to relieve suffering but looks solely to the exigencies of the case the better will its real motives be understood.

Section 1. "That it shall be unlawful for any student, attendant, house physician and surgeon, or any one else to expose the body or person of any female patient, in any hospital, medical college or elsewhere, in the State of New York, for any purpose other than the performing of an operation necessary for recovery, or relief from pain of said female patient."

Section 2. "That when it shall be deemed necessary for such operation to be performed the parents and sisters and brothers, or such of them as shall be living, or in case none shall be living the guardian or next friend designated by such patient shall be notified, at least 24 hours before the performing of such operation and at least three of such persons notified shall be allowed to be present in the operating room during the entire performance of such operation, and until said patient shall be removed from said operating room and replaced in her bed until she recovers her sense; except, when in case of accident the notification herein required may be dispensed with, if an immediate operation shall be deemed necessary by the authorities in such hospital or medical college. In case such notification shall be dispensed with no person or persons other than immediate relatives or guardians or next friend of such female patient so to be operated on shall be permitted to witness such operation or any part thereof."

Section 3. "Any person or persons convicted of performing, or attempting to perform, or who aid by their presence or otherwise in the performing of an operation upon a female patient, except as permitted herein, shall be deemed guilty of a felony, and the punishment thereof shall be by a fine of not less than $100, and not more than $500, or by confinement in a county jail or State prison for a term not less than one year and not more than five years or by both such fine and imprisonment."

Section 4. "This act shall take effect immediately."

BOARD OF HEALTH.

A new and important office has been created by the Board of Health in connection with the hospitals under its charge to which Dr. George Taylor Stewart has been appointed as Superintendent. This office includes the supervision of the Riverside, the Willard Parker and the Kingston Hospitals in Brooklyn. By means of this arrangement for a general head for the hospitals the physicians who have been acting in administrating capacities in each separate institution will be free to devote their time to strictly professional duties, while the superintendent will exercise a general executive office. Dr. Stewart was for many years superintendent and chief of staff of the Metropolitan Hospital, Blackwell's Island, and later superintendent at Bellevue Hospital from which position he resigned at the commencement of the year. He brings to his new work a large experience and a brilliant record for executive ability.

CRUSADE AGAINST MALARIA.

Under the direction of Health Commissioner Lederle an active campaign against all malaria breeding spots throughout the city has been begun and is to be pushed with the utmost vigor until every means of the department has been exhausted.

For a long time a corps of experts has been traversing the several boroughs, making detailed maps of all sunken plots or excavations where stagnant water might lie and breed malaria.

With this data on hand the department will begin at once to see that the pest producing holes are filled up. The co-operation of the Street Cleaning Department will be had in this as far as the use of their clean débris will permit. All mosquito pools will be classed as nuisances.

The only effective plan of exterminating the mosquito, according to Dr. Lederle's ideas, is to draw off the water from the pools and fill them. Sanitary inspectors will pay particular attention to rain barrels, tanks and all back yard conditions to see that they also do not contribute to the spread of malaria by mosquito infection.

All the doctors in the city have been asked by circular to help in the crusade by sending to the department blood cultures from malarial patients. These are tested and statistics of cases tabulated, and the proper reme-

dies for each infected section will be applied at once. Seven thousand physicians have been thus notified and they are responding to the requests numerously.

That every serious case of malaria should be isolated is not thought of, but some experiments in that direction may be made.

REPORT OF THE STATE BOARD OF MEDICAL EXAMINERS.

The total number of candidates since the establishment of this board, eleven years ago, was 7,034, of which number 5,528 or 78.5 per cent. were successful, or 1,506 or 21.4 per cent. unsuccessful. The total number for the last academic year was 928, of which 685 applied for license and 558 were successful. Of the number appearing before the old school board 17.8 per cent. were rejected; of those appearing before the Homeopathic Board 13.2 per cent. were rejected, while 50 per cent. were rejected before the Eclectic Board. The board expressed itself in favor of some action, by which old practitioners from other States could be more leniently dealt with in regard to the examination in the primary branches. The board also recommended that the degree of D.P.H.—Doctor of Public Health—be conferred.

CURE OF ASTIGMATISM WITH THE KNIFE.

Dr. George Bull, of New York, has recently operated upon a case of inverse astigma, with entire success. Dr. Bull in describing the operation, says:

"I made a complete tenotomy of the left external rectus, being careful not to cut the capsule much beyond the upper and lower borders of the tendon. Three days later the ophthalmometer showed that the corneal astigmia of the left eye had disappeared. The curvature of the vertical meridian had not changed; that of the horizontal meridian had diminished.

"Knowing from experience in other cases that operations on the recti muscles frequently cause changes in the refraction, and particularly in astigmia, I gave the patient the trial-frame with the glasses chosen for her a few days before, and she remarked at once that they blurred her sight. Upon taking them off she discovered to her astonishment that she was able to see the lowest line of distant letters without glasses, and that all the lines in the clock dial were equally black and distinct."

THE CRAIG COLONY PRIZE.

The prize of $200 annually, given by Dr. Frederick Peterson for the best original essay on the Etheology, Pathology and Treatment of Epilepsy, was awarded this year to Dr. Julius Donath, of Budapest, Hungary, for his paper on "The Presence of Cholin in Epilepsy and Its Significance in the Production of the Convulsive Attack."

EUQUININE IN PEDIATRIC PRACTICE.

Dr. Rocaz, of Bordeaux, considers the availability of this drug for administration to children, because of its almost total lack of unpleasant taste. Euquinine is the ethylcarbonic ether of quinine, occurring as white, needle-like crystals, sparingly soluble in water, but very readily in ether, chloroform, and alcohol. The author administers it in suspension in a teaspoonful of sugar-water. It was always taken without repugnance. In several cases in which it was thus prescribed and readily taken, the administration of quinine by the mouth had been impossible. It also has the advantage of being well tolerated by the digestive tract even when given in massive doses.

ACTION OF IODIPIN ON THE VASCULAR SYSTEM.

The influence of iodine on absorption and its specific action on the vascular system have been frequently discussed. Iodine causes a dilatation of the peripheral vessels. The utility of the drug is unfortunately hampered by numerous injurious collateral effects. This drawback often compels us to avoid iodine even in the face of urgent indications. Recently, iodipin (iodized sesame oil) has been shown to be a most efficient substitute for iodine, equally potent and free from toxicity. Dr. Richard Thaussig has inaugurated clinical experiments with iodipin, selecting affections which make a vascular drug-action desirable, such as asthma, arteriosclerosis, syphilitic endarteritis and chronic lead-poisoning.

GERMAN REPORT ON HYPNOTISM.

The commission of experts in mental diseases appointed by the Ministry of Education to investigate the healing value of hypnotism reports that it is essentially worthless. The commission is composed of Professor Mendel and Drs. Gock, Munter and Aschenborne, and was appointed during the faith healing excitement a year ago.

The report declares hypnotism cannot produce organic changes nor cure epilepsy or hysteria, but it can be used helpfully in some instances, by removing symptoms through suggestion. No good physicians would leave out of account, the influence of suggestion upon patients, but hypnotic suggestion may intensify disease, when laymen apply it who do not know when to use it and when not to do so.

The influence of hypnotic suggestion diminishes in proportion to popular knowledge of it. It is most powerful when regarded by a subject as marvelous and supernatural. The commission also notes that hypnotism is less used than formerly.

FRESH AIR TABLETS.

Fresh air tablets are a preparation discovered by a French scientist. It was while investigating acetylene that he discovered that he could combine certain chemicals into a tablet which, on being dropped into water, dissolved and gave forth pure oxygen. These tablets will be exceedingly useful in a closed carriage, a submarine boat, a mine, or anywhere else where the air has become vitiated.

MEDICAL LIBRARY.

Mr. Carnegie has offered to the College of Physicians of this city $10,000 for the maintenance of its library, on condition of the college raising $50,000 more. Of this $50,000 Mr. F. W. Vanderbilt has contributed $10,000 and Clement C. Griscomb $5,000.

The Health Department of this city has accomplished some practical work against the substitution of drugs, by the purchase of phenacetin powder from over 300 stores, and only about 50 were found unadulterated, acetanilid being the chief adulterant, at a cost of two and a half cents an ounce where the former is one dollar; a great temptation!

If the druggist can not be trusted in this matter it will become necessary for physicians to dispense their own drugs, in fact many do now, for this very reason. It is important that the profession follow this matter up individually, warning their patients against possibilities and druggists known to be fraudulent.

MISCELLANY.

—By a recent law in France parents are compelled to have their children vaccinated during the first year of life and revaccinated at the age of twenty-one.

—Doctors' coachmen in Berlin wear white hats. This is to enable the public to promptly recognize a physician's vehicle in case his services are suddenly required.

—Sugar placed in water, or the use of simple syrup, will greatly facilitate the removal of plaster from the hands after applying plaster dressings. The use of sweet oil is also serviceable for this purpose.

—Physician (looking into his ante-room, where a number of patients are waiting): "Who has been waiting the longest?"

Tailor (who has called to present a bill): "I have, doctor; I delivered the clothes to you three years ago."

—The *Gazette Médicale* reports the experience of M. Baudoin, who was very subject to seasickness. Adopting a medical suggestion in regard to position in the anesthetic use of chloroform, he rested in an inclined position at a considerable slope and found relief from the nausea.

—It has been discovered that the air from limestone caves has all the characteristics of that of the mountains. This discovery has just been made use of in the locating of a sanitarium near one of these caves, and the air for the institution is supplied from the underground caverns. This establishment is at Luray, Va.

—The Physician's Club is the name of a recently organized society formed by Batavia, (N. Y.) doctors. It includes all the practitioners of both schools, allopathic and homeopathic, and is formed for the promotion of the social as well as the business interests of the members. Dr. F. B. Showerman is president and Dr. John F. Baker secretary.

—Sufferers from cramp, *Popular Science* says, will find instant relief by this simple method: When attacked by the malady, turn up the toes (ankle motion) as far as possible. This draws up the muscles of both the calf and thigh and relief comes at once. Many bathers at seashore resorts have followed this instruction with satisfactory results.

—The destruction of rats throughout Germany is under consideration by the Imperial Health Department. The object of the health department is to mitigate the danger of contagious diseases. Dr. Roert Koch, the eminent bacteriologist, has been commissioned to devise the tactics of the campaign to this end, which will be begun in the seaports.

—A tent city for consumptives is to be established in the suburbs of Santa Fe. A tract of land has been bought in the foothills southeast of this city, with southern exposure, whereon will be laid out a model tent city, with water supply, electric lights, telephone, sewer, etc., to be a sanitarium on a new and large scale. A number of New York health seekers have already applied for tents.

—Bruck has found (*Sem. Méd.*) that the application of benzine for a few seconds will banish temporary redness of the nose and render the skin less shiny. The application is non-irritating and can be used as a prophylactic measure under circumstances liable to induce erythema in the predisposed. It is applied on a gauze compress over the entire patch of erythema, avoiding friction.

—A friend wrote to Mark Twain asking his opinion on a certain matter, and received no reply. He waited a few days and wrote again. His second letter was also ignored. Then he sent a third note, inclosing a sheet of paper and a two-cent stamp. By return post he received a postal card on which was the following:

"Paper and stamp received. Please send envelope."

—The conclusions drawn from Gottlieb and Franklin's experiments with an arc light are that light in proper concentration from a source of sufficient actinic power can be made to penetrate the entire thickness of the human body; hence all the internal organs are susceptible to its influence. The proof of the pentration of actinic rays through the organs of the body opens a field for its successful employment as a therapeutic agent in internal maladies.

—Albert W. Warden, in a communication to the *Journal of the American Medical Association*, proposes the use of ether in the case of condemned criminals who refuse to give any clue to their confederates. Ether given as in surgical operations, but carried only to the stage of stimulation, not of profound anesthesia, will cause otherwise silent people to talk; the will-power is in abeyance, and the door of the mind unlocked so that the tongue is forced to tell the most secret things.

—"As we approach the great centres of population," says *La Nature*, "the quantity of dust held in suspension by the air increases enormously. According to Sir James Creighton Browne. . . . The air of London contains 150,000 proportional parts of dust to Paris's 200,000, while in Argyleshire, Scotland, there are only 200. The air of cities is impregnated with dust and filth. To combat their deleterious effects, the streets should be freely ventilated and watered. Wind and rain are the great destroyers of dust, and they should be given a large field of action by isolating houses, enlarging streets, placing a limit on the height of buildings, etc."

—Dr. Robert Maguire, physician to the Brompton Hospital, London, stands very high, both as a physician and bacteriologist. Moreover, he is one of the foremost English authorities on tuberculosis. He has been experimenting with formaldehyde, and he asserts very positively that in it we have a specific for consumption. The remedy must be used hypodermically, and the injection must be made in or about the elbow. It had been demonstrated that a solution representing the strength of one one-hundred-and-seventieth was fatal to the bacillus of phthisis. He employed the agent in this strength with the most astonishing results. He believes this treatment will cure the dread malady in any stage.

—Maxime Gogan, the richest citizen along the shores of the Gulf of St. Lawrence, has recently passed away at Cocagne, N. B., at the wonderful age of one hundred and eight years and seven months. His grandfather, Louis Gogan, fought under Montcalm in the defense of Quebec in 1759. He drank for more than sixty years a quart of Brandy and a pint of extra dry champagne every day. Until he was eighty years old he could lift a larger load than any man he had ever met. Last April, when he was one hundred and eight years old, he walked to the spring in the rear of his home, and, holding his full weight on his hands and toes, drank from the pool without letting his knees touch the ground.

ORIGINAL ARTICLES.

GENERATION AND THE LAW OF SEX.*

BY WM. MORE DECKER, M.D., BUFFALO, N. Y.

PART II.

We are now ready to take up the Law of Sex. I believe there is a Law of Sex, as much so as there are other laws in nature, or as much so as there is a law in medicine. But, that there is doubt and mystery concerning this law, is evident, from the various theories, that have been advanced, from time to time, in reference to generation and reproduction of male and female individuals.

Theories, many and strange theories, have been advanced by men, to explain the mystery of gender, but all these theories remain hypothetical, and not much truth has been evolved, or facts established. I will not attempt to discuss these various theories, in reference to the Law of Sex, but let me bring to your minds, some of these numerous theories, by reference only. I cannot cite authority for these various theories, but you doubtless will remember them, as I present them.

One hypothesis states, that sex, in mankind, depends on which ovary produces the germ-cell. If the fecundated germ-cell came from the left ovary, the offspring would be male. If from the right ovary, the offspring would be female, or vice versa. I remember the theory, but do not remember which ovary, the theorist claimed produced the germ-cell, which, when fecundated, produced the male.

Another theory is, that the sex of progeny is determined by the period of copulation. If copulation occur soon, or immediately, after menstruation, then the offspring would be of a certain sex, whereas, if intercourse occurred late, after menstruation, then the offspring would be of different gender. I do not remember whether early copulation produced females, and late copulation males, or the reverse. It does not matter.

Another theory bases the Law of Sex on the emotion experienced by the individuals, who participate in the union. According to this theory, if the thrill and pleasure of copulation is chiefly, or only experienced by the male, then the baby will be a male. On the other hand, if most of the ecstasy is experienced by the female, then the baby will be a girl. The Law of Sex here, rests entirely on which parent experiences the greater emotion at the time of copulation.

Among bees it has been discovered, that when the Queen bee, which is the female of the hive, dies, and there is no Queen to take her place, the workers, which are imperfect females, create the new Queen by feeding one of the larva bees in excess of all others. They, also, I believe, shape the cell occupied by this grub to conform to the cell of a Queen bee, or else remove the grub into the Queen's cell. It matters not; but the extra feeding of this grub develops it into a perfect female, and thus the hive is provided with the new Queen. Some theorists, reasoning from this example in nature, have assumed that, in generation, the females are produced by excess in nutrition, that exists in the cells, that enter into combination to form the new life. I do not know, that this theory goes on so far as to state whether the excess in nutrition comes from the germ-cell or the sperm-cell, or whether it is the amount produced by the combination of both.

I have met physicians, who claim that they could tell the gender of babes, before they were born, and that the gender depended on whether the child was habitually carried on the right side of the abdomen of the mother, or on the left side.

Again, other physicians believe, that sex depends on the duration of gestation, that females are born on time, at the expiration of nine months, and males are born a few weeks later. These two last theories are almost too absurd to classify.

Sex has been accounted for by affirming, that ovulation varies every other month, therefore, the male progeny results from conception on one month, and female progeny from conception on the following month.

The very learned and eminent Vienna scientist, Dr. Leopold Schenck, startled the world in 1898, by announcing, that he had discovered the Law of Sex; and while I have not access to his theory in detail, the gist of it is this:

He affirms, that the normal blood count in the human male is 5,000, whereas, in the female, there are only 4,000. "To produce males, he seeks to increase the number of corpuscles in the prospective mother to the male standard." "To produce females the opposite course is taken." This would seem to be another principle of determining sex by nutrition.

From another source, I learn, that the professor believes gender is determined by the "sexual superiority" of one or the other parent. He affirms, "if a woman be dieted according to his method, she can reach a stage, in which she becomes sexually superior to the man, and her offspring will then be male."

One of the latest theories, in regard to sex, has been recently advanced by Dr. A. Van Lint of Belgium. He affirms, that the sex of a child corresponds always to the weaker parent, this being a device of nature to keep the sex approximately of equal numbers. He thinks, that, as the stronger generation cells will be most potent in determining the sex of the offspring, the child will have the sex of the weaker parent. I have not access to his book, published last Sept.

Spencer and Darwin affirm, that sex is due to "natural selection." This is merely substituting one mystery for another.

I have now cited, in all, eleven theories advanced by different parties to account for sex in the human race, and the lower form of life; but I have not begun to exhaust the theories. Of all the theories, in reference to sex, that have come to my notice, I have never yet found one, that was convincing to me; and, as theories are still being advanced by biologists, scientists, and physicians, it shows, that the question is not settled.

Broadly speaking, it is an established fact, that generation depends on the union of two sexual beings of unlike and opposite sexual organization. The Law of Sex, like the Law of Generation, goes by opposites. The female produces the males, and the male the females. The female desires the male, she receives the male, and she produces the male, her opposite in gender. The male desires the female, he obtains the female, and he begets the female, his opposite in gender.

I have abundant proof of this law, but there are no laws without exception, and there will be found exceptions to the law, which I enunciate.

Man is a dual being. It takes the blending of two individual lives to produce a human life; or, speaking more accurately and scientifically, it requires the union of the germ-cell, which is the female cell, and the sperm-cell, which is the male cell, to create a human being.

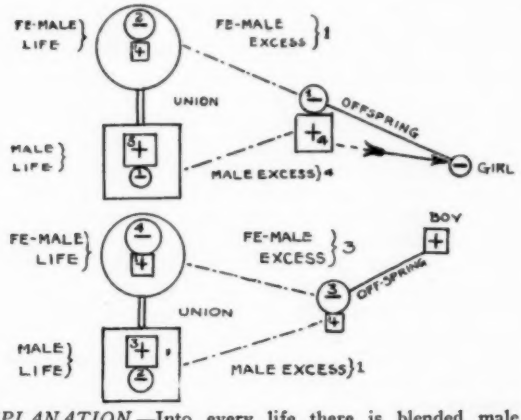
* Read before the Clinical Club, Buffalo, N. Y., Dec. 1st, 1902

The woman not only produces males, but she gives birth to females. She not only brings forth individuals, that are like her in gender, but she produces individuals, which are the opposite of her in gender. There is no other source of supply for the human race. Whatever the gender, they are the offspring of mother; therefore, if mother always produced individuals of one gender, there must be some other influence to produce individuals of the opposite gender. I affirm, that the tendency of mother is to produce male individuals, which are the opposite in gender to herself; but, that she, also, gives birth to individuals of like gender to herself, is accounted for, by her mate, the man. The tendency of the man, is always to beget individuals of opposite sex.

Into the life of every man and woman there enters at least two other lives, that of father and that of mother.

When a man and woman enter upon domestic life and beget children, the offspring is determined by the excess of either male or female life in the blending of the sperm-cell with the germ-cell. If the excess in the fecundated germ is female, the offspring will be male. If the excess in the fecundated germ is male, the offspring will be female. To make my theory plain I have devised a generation chart to explain the Law of Sex, and here it is:

Now what proof have I that my theory of sex is



EXPLANATION.—Into every life there is blended male and female life. The symbol for female life is a circle with this sign — The symbol for male life is a square with this sign +; and the units, or numbers, denote the degree of each kind of life in an individual. The offspring from the union is opposite in gender to the excess life of the union.

correct? 1st. As a rule, boys resemble their mothers, and daughters resemble their fathers. There are many exceptions to this rule, but the resemblance is sufficiently frequent and striking to establish some evidence, for the belief, that sex goes by opposites.

2nd. Inheritance goes by opposites in gender. The characteristics of mothers are inherited by their sons, and the characteristics of fathers are inherited by their daughters. Many examples could be cited in confirmation of this statement. I will only refer to evidence in my own family and one other. My son more strikingly resembles his mother, than his father, and he has inherited from his mother, what is termed a "pigeon chest." The breast bone is very prominent. Our first child, a daughter, did not inherit this kind of thorax, as she has the characteristics of her father.

Spencer cites a case of extra digatals on the hands and feet of a family. The extra development was first noticed in the great-great-grandmother, Esther P. She had an extra little finger on one hand. Her husband was normal. Her family consisted of 12 daughters, and six sons, but the abnormality only occurred in one child, and he was a son, the opposite to her in sex. This son had eight sons, and four daughters. All the daughters, and five of the sons were normal, but in three of the sons the abnormality re-occurred. This is not in harmony with my theory, but it is in harmony with the well-established law in generation, namely, that the type follows the male. There was an effort on the part of nature to establish this abnormality, as a type, but, for some reason, or other, it failed, as it did not re-occur in subsequent generations, except in one branch. In the descendants from two sons, who inherited the abnormality, it did not appear, but in the descendants of one of the three sons, who was abnormal, it finally reappeared. This son had two children, a boy and a girl. The boy was normal, but the daughter was born with six fingers on each hand, and six toes on each foot.

Tracing the abnormality from the first parent, Esther P., it reappears in the first generation in a son; in the second generation in a son; in the third generation it appears in a daughter.

Starting again with the first mother of the abnormality, and following down the line of descent from one of her sons, who was normal, but in whom the abnormality must have been latent, this son had two sons and seven daughters, all normal. This is the second generation; but in one of his daughters, who was normal, the tendency to the abnormality must have been transmitted in a latent form, as it reappeared in one of her sons, who had six fingers on each hand. She had seven other children, four sons and two daughters, all normal.

This outcropping of the abnormality crossed from mother to son, from son to daughter, from daughter to son, but was latent in two generations. This is in keeping with my theory, also, in keeping with that form of generation known as alternate generation, in which sexual genesis alternates with a-sexual genesis, but finally sexual genesis reappears.

Biologists name this sort of inheritance Atavism; that is, retroversion, or back stroke, in genesis, to some previous ancestor, but to my way of thinking it is a progressive stroke forward, the progressive force being latent in potency until finally it is sufficiently potent to declare itself.

We have further proof, in confirmation of this law of sex, in the change of character, that is produced in individuals, by change in sex. Boys, that are castrated before puberty are unique—they are eunuchs. When the male is unsexed, early in life, the tendency is to revert more nearly in character to the opposite gender, the gender that produces him, namely, the female. His voice does not change. He has the voice of a woman; and, I assume, that his beard will not grow, or will be stunted in growth. He, also, loses his courage and energy. He is more mild in disposition and more cowardly.

On the other hand, the unsexing of the female, prior to puberty, tends to bring out physical traits in her character, that are more masculine; and, after the natural change in life at the close of menstruation, the organism of the woman often becomes coarser and more masculine. She simply approaches, physically, more nearly to the male, to whom she owes her gender.

In Flint's Human Physiology, on page 895, there is a cut of a negro woman, that has twin babies in her lap—one white and the other black. Flint calls this an example of super-fecundation, and gives us to understand that one child was begotten by a negro father, and the other child by a white man. The woman must have had

intercourse with these two men on the same day. Each male fecundated a separate germ-cell; but, possibly, this difference can be accounted for in a different way. The father of both children was a white man, but the type of the babes was varied by the gender. Possibly the white child was a female and the black child a male. I wrote to the hospital, that had record of this case, but the letter was returned by the postal authorities. The hospital must have gone out of existence. I therefore could not obtain any evidence to support this theory; but I wish to add in this connection, that it is not always true, as Flint states, that when twins are born of cross-gender the female remains barren.

Further evidence, in support of my theory, is found in the fact that, in some breeds of sheep, females have horns. This is a masculine characteristic, which they inherit from the male.

Now and then we meet with women that have a beard, or that have considerable tendency that way, with more hair than usual on their faces. This tendency to a beard, in women, is exhibited by the unmarried more than by the married. It seems, "that each woman receives from her male parent latent beard characteristics. If she has children she certainly transmits such characteristics" to the sons. If she has no offspring it seems that the characteristic tends to develop in her own person.

You remember, in speaking of the glow-worm, I stated, that her male companion was a fly—a beetle. The reproduction of this pair, it seems to me, illustrates my theory of sex. The glow-worm, which is the female, produces the beetle, the male; and the beetle fecundates the eggs, which produces the female, the worm. In the reproduction of females the organism is completed with the completion of the worm, but in the reproduction of the males it requires a still further process of development, another step in creation beyond the worm, to produce the winged insect, the male. This reproduction of the male is analogous to what takes place in the generation of the full-fledged butterfly.

We now turn, for still further evidence in support of my theory, to the breeding of sheep. You know, in sheep that are not domesticated, the offspring is generally equally divided between male and female. There is not much variation either way. In France accurate experiments in the breeding of sheep have been made with a view to reproducing ewes in excess of male sheep. These experiments prove that, if a flock of ewe sheep are coupled with young rams, there will be a much larger number of ewe lambs born than though the flock was served by old rams. For example, in a flock of ewes, that were served by rams less than eighteen months old, there was born thirty-five males and seventy-six females. You see, the number of females are more than double that of the males. The progeny from four-year-old ewes amounted to 5 males and 21 females, that is over 4 females to one male.

Now why is this? The explanation is evident. The ram, that served the flock was only eighteen months old, but rams are not mature until three years old. He was in the process of development. "In the morn and liquid dew of youth" there is not only sexual ardor, but every cell of the human organism contains an unusual amount of reserve force. It is full of nutrition, extra nutrition, far exceeding the waste of the system. At this time of life there is taken on material, for use in the economy, which the system appropriates, and which is far in excess of the waste. It is a period of growth. The same is true of the sperm-cell of the young male. That, also, has the formative material in excess, therefore, the sperm-cells, from the young buck, unite with the germ-cell of the ewes, and the units of vitality from the male life, added to the units of the vitality in the female life, show an excess on the part of the male. The offspring, therefore, show an excess of females.

Now in this experiment the reverse test in the breeding of sheep was made. The ewes were served by a four-year-old ram; that is, a mature ram, that had passed the formative stage of development, and his sperm-cells, therefore, were not charged with an excess of formative material; as in the young ram previously stated. What was the result? The flock brought forth fifty-four males and thirty-one females. Here, you see, that the excess in sex was the reverse. The female influence predominated in the fecundated germ-cells, and the result was an excess of males. This reverse throw of gender was more strikingly illustrated when the experiment with *two-year-old ewes* and four-year-old rams was made. The two-year-old ewes were still in their formative stage of development, and they furnished germ-cells, which were supplied with an increase of material, for formative growth, the same as every cell of their organism; whereas the ram, that served them, was mature, and had passed the stage of development, and the progeny that resulted was, therefore, more than two males to every female. I consider these experiments very valuable, as they doubly prove my theory in reverse order. (Taken from Henry Stewart's book, "The Domestic Sheep," Second Edition, 1900, page 121.)

The first born of human wedlock, when both man and wife are young, is usually a daughter, if the birth occurs within one year after marriage. The first born is a daughter because of the excess of sperm-cells. In the life begotten the mother can only furnish one germ-cell, whereas the father furnishes many germ-cells, and the frequency of copulation increases the supply far beyond what is common in after years when sons are begotten.

Sons are usually born after daughters. I believe this to be the natural order of generation, notwithstanding it is affirmed in Genesis, that Adam was first created.

Plants go to seed when their vitality is lowest. A vigorous plant can be made to flower and fruit by cutting its roots and curtailing its nutrition; and when the female life exceeds the male life, in generation, then sons are born. The other day I came upon a very interesting case, which proves this point. William D. Lewis, of Port Gibson, Indian Territory, is now eighty-six years old. He is the father of twenty-seven children. He has buried five wives, and the sixth (who is much younger than himself) recently bore him a son. The only child of Mohammed, who had several wives, was a daughter, by his first wife, who was a widow at the time of marriage, and much older than himself. In man, as in sheep, like conditions of generation influence gender.

For further and final evidence, as to my theory of the Law of Sex, let us turn to the honey bee, which furnishes us with proof so positive and convincing, that it cannot be disputed.

The drone bees, which are the males, have no father. They are reproduced by the Queen. The drones, or male bees, develop from unfertilized eggs, which the Queen, or female bee, produces. This is another example of, so-called, "true parthenogenesis;" that is, reproduction from virgin mothers; but, bear in mind, that the Queen bee is not a virgin. Most of her eggs are fertilized by the drones, but the few, that apparently escape fertilization, may possess latent fertilization, or are influenced by association with fertilized eggs.

On the other hand, the workers, which are imperfect

females, only result from fertilized eggs, and the eggs are fertilized by the drone, therefore "the drones never have any other children than daughters," and the drone is also the father of the Queen bee, which is the only female of the hive, that lays eggs and reproduces bees.

I stated in another part of my essay, that, when there was no Queen in the hive, the workers, which are imperfect females, produce a new Queen by feeding one of the grubs, which would develop in a work-bee, in excess of all others, thus producing a new Queen by the quality and excess of the food. But bear in mind, that the gender was already determined in the grub, before the feeding began.

The lesson from the bees is, that the females, whether workers or Queens, are only begotten by the male, or drone bees, and the drone, or male bees, are reproduced by the Queen bee, alone, from so-called unfertilized eggs.

Gentlemen, the longer I live the more I am convinced, that it takes the reverse in life to make a man or woman, and to make the world progressive. There is evolution by similars, but there is, also, as much, or more, evolution by opposites; and there are opposites within opposites and similars within similars.

TUBERCULOSIS AND HEART DISEASE—TWO GREAT FACTORS OF TO-DAY.

THOS. R. ROBINSON, M.D.

IN the first stage of phthisis the hydrochloric acid secretion of the stomach is normal or increased, and consequently in incipient phthisis the administration of hydrochloric acid is to be avoided, though proper in the terminal dyspepsia of the disease. The use of alkalines is, perhaps, indicated for the suppression of pyrosis, but this opens the door to fermentative processes, and thus increases the irritation of the mucous membrane. Especially advisable is the prescribing of drugs which are suited to remove the gastric weakness. Such are alcohol in any form, particularly cognac, and especially bitter drugs. According to Klemperer's latest researches creosote takes the first place among these; it should be given in capsules or pills, or in alcoholic solution, a quarter of an hour after meals, three times a day, in doses increasing from 0.005 to 0.2 gramme. It possesses a remarkable action on the diminished motor power of the stomach; the alcoholic solution being the best when it is well borne. This author believes that the favorable results so generally experienced from the use of creosote in phthisis are not due to a problematic antibacillary action, but to its power of increasing the strength of the stomach. Besides creosote, strychnine, rhubarb, gentian, etc., are useful, as well as electricity and massage. Of especial importance in the dyspepsia of phthisis is the condition of the general nutrition. If the body weight increases and the character of the blood improves, one can be sure that the evidences of dyspepsia will disappear. Too much attention, however, must not be paid to the subjective sensations of the patient in the initial stage of the pulmonary disease, as the appetite comes to the phthisical with the effort to eat. Finally, it is to be borne in mind that the motor function of the stomach is under the control of the nervous apparatus, which in its turn communicates with the brain. Psychic treatment is, therefore, to receive proper consideration.

Not infrequently clinical observers have reported on the rarity of the association of valvular disease of the heart and pulmonary tuberculosis in the same subject. An excellent example of this sort has been described by Lannois, as follows: A blacksmith, thirty-nine years old, had had an attack of enteric fever at the age of five, followed by convulsions; at seventeen, an attack of acute articular rheumatism, with pericarditis; at twenty-three, a second attack of rheumatism, with endo-pericarditis; three years later, a third attack; and three years later, a fourth attack. From the age of eighteen years he had had a winter cough. Following the last attack of rheumatism the appetite had failed, strength and flesh had been lost, and albumin had appeared in the urine. The respiratory murmur became enfeebled below the clavicles; sonorous râles were heard posteriorly and at the bases, while the cough developed sibilant râles. The patient became ill at ease, felt slightly feverish, and took to bed. It was found that the temperature was 105°. Oppression of the chest set in. The sputum became nummular. Sibilant and subcrepitant râles were to be heard. The number of respirations was increased. Dyspnea became marked and aphonia appeared. The patient grew progressively worse and finally succumbed. At the post-mortem examination the right pleural cavity was found obliterated by adhesions. Both lungs were congested. Beneath the pleura numerous gray granulations were visible, while the anterior margins of the lungs were emphysematous. On section, granulations, some of which were caseous, were found throughout both lungs, but in greatest number at the apices. The glands at the hilus of the lung were enlarged, but not caseous. The kidneys contained numerous miliary tubercles. The spleen was enlarged, the liver fatty. The heart was bound to the pericardium by old adhesions. Neither the organ nor its serous sac presented evidence of tuberculosis. Both the aortic and the mitral leaflets were thickened and the two valves were manifestly incompetent.

Admitting the tubercle bacillus as the undoubted exciting cause of phthisis, the question arises regarding the existence of local or general predisposing pathological conditions. Pleurisy would seem to be capable of producing a vulnerability of the lung tissue, though in some instances it is probably merely an indication of constitutional weakness. Pleurisy is, at any rate, often observed as an antecedent of phthisis, but the exact relation of the two has been much discussed. These cases may be divided into five classes:

1. Those in which a pleurisy with effusion occurring in a person with good health is immediately followed by rapidly progressing pulmonary tuberculosis. The pleural inflammation in these cases is undoubtedly of tubercular origin.

2. Cases of sero-fibrinous pleurisy, followed by a slow development of chronic interstitial pneumonia. This pulmonary inflammation may be tubercular in its origin, but the final development of distinct tuberculosis is at any rate to be looked for.

3. Cases of sero-fibrinous pleurisy ending in recovery, but followed after some months by the development of tuberculosis at one or both apices. These are usually observed in persons constitutionally weak or whose health has been impaired. That the pleurisy was itself tubercular is possible, but rendered improbable by its occurrence in the lower part of the chest, while the tuberculosis which subsequently develops, is.

4. Cases occurring in middle or advanced life, in which a sero-fibrinous pleurisy has become chronic, with deposits of false membrane, through neglect or failure to recognize the disease. Many of these finally develop tuberculosis pulmonum, but the interval is so

great that the pleurisy cannot but be regarded as primary and simple in its character.

5. Cases in which an empyema antedates the tuberculosis.

a. Sero-fibrinous pleurisies, apparently of simple origin and terminating in complete recovery, may be followed, after a lapse of a few months, by the development of phthisis pulmonalis.

b. In all probability the pleurisy in these cases acts as the predisposing cause of the tuberculosis.

c. Primary sero-fibrinous pleurisy may result in fibroid phthisis with the subsequent occurrence of tuberculosis pulmonum.

d. Fluid effusions remaining in the chest for a long time may, finally, so interfere with the nutrition of the lungs or of the body at large as to render it liable to general or local tubercular infection.

e. No cases of pleurisy should, therefore, be neglected but great care should be taken that after apparent recovery the health is completely restored. For at least a year the physician should keep a watch over the patient and should order prolonged rest from business, change of climate, etc. The patients who have reached middle life and whose costal cartilages have begun to lose their elasticity, effusions should not be allowed to remain in the chest more than two or three weeks, and should be aspirated at short intervals, if the fluid reaccumulates. If dulness and feeble respiratory murmur continue after the fluid is absorbed, tonics and alteratives should be persevered with for a long time. The regular employment of gymnastic exercises and the inhalation of compressed air are great aids in reexpanding the chest.

Schety says that as all the investigations carried on have as yet failed to give us any specific against tuberculosis, we are obliged to combat the disease in some other way, *i.e.*, by strengthening the organism and making it as resistant as possible to the action of the poison. The dietetic and the climatic treatment are therefore to be considered, and of these the most important is the former, since the latter cannot so often be carried out. As the affection is essentially a wasting disease, the dietetic treatment is greatly to be desired, but unfortunately meets with the greatest obstacles in the form of gastric disturbances. The author quotes extensively from well-known writers regarding the digestive disturbances of phthisis, but says that no satisfactory explanation of the cause of this is offered. The fact that gavage, as practised by the French clinicians, is often of great advantage to the patient is an indication that in spite of the patient's dislike for food, there is no abnormality of the digestive capacity of the stomach. Meagre investigations have been conducted regarding the gastric function in phthisis, Schety details the studies which he has made on twenty-five cases of the disease. He chose both incipient and more advanced cases; those with but little fever, and those with marked pyexia. He first examined the patient according to the method of Kahn and von Mering, viz., in the morning, on an empty stomach, the patient received two hard-boiled eggs, and one hundred to one hundred and fifty grammes of water. After an hour the gastric contents were carefully removed by aspiration with a soft tube, filtered, and examined. The examination consisted in determining: 1. The reaction. 2. The presence of lactic acid by the use of the carbolated-iron test. 3. The presence of free hydrochloric acid by the same reagent, as well as by Congo-paper, vert brillant, tropaolin, methyl-violet and phloroglucin-vanillin (the last of which tests he considers the best). 4. The presence of acetic and butyric acids, tested by the odor. If it was determined that only inconsiderable quantities of lactic, acetic, and butyric acids were present, the amount of free hydrochloric acid was determined quantitatively by titration with one-tenth normal sodium solution. The peptic strength of fifteen cubic centimetres of the filtrate was then tried on a piece of boiled egg albumin, one millimetre thick and six millimetres in diameter, and the time required for digestion determined.

Within two or three days a second examination was carried out, after the method of Leube; the patient receiving a mid-day meal of soup, beefsteak, bread and water, and the contents of the stomach being removed after six hours, and tested in the way already described.

Hufler took the ground, as the result of his own observations, that in all cardiac diseases, whether of the muscle or of the valves, the resulting passive congestion weakened or even abolished the ability of the stomach to produce acid. In these studies he employed the test-meal of Leube, which consists of a large quantity of meat, and removed some of the contents of the stomach after two hours and again after six hours. As the number of cases on which the experiments were made was small, Adler and Stern conducted a series of investigations on the same subject. For this purpose they chose 20 typical cases of heart disease, in most of which the examination of the gastric contents was made several times. Each patient received the trial-breakfast of Ewald, consisting of 35 grammes of bread and a glass of water, and this was removed by the sound after one hour. Congo paper and the Gunzburg reaction were employed to determine the presence of free hydrochloric acid, the latter being looked upon as decisive. The presence of lactic acid was determined by Uffelmann's reagent. Whenever the quantity of the gastric contents was large enough, the total acidity was determined by neutralization with a normal soda solution. The determination of the peptic strength was not considered important, since this always goes hand-in-hand with the presence of free hydrochloric acid. In about half of the cases the motor sufficiency of the stomach was tested by Ewald's salol method.

Bristowe has found that there are two well-marked varieties of obstructive mitral murmurs, of which the first, the presystolic or auricular-systolic, occupies the last part of the diastolic period, running up to the first sound of the heart; while the latter is a diastolic murmur, commencing with the second sound and dying away during the diastole. The first is the more common, more frequently met with, and more characteristic. It is sometimes long, sometimes very short, very rough; sounds like a trilled "r," or like a saw; begins in the diastole and increases in force until it culminates in the first sound. It is usually only audible over a very limited area, the centre of which is a little above and to the right of the apex beat and it is faintly or not at all heard in the axilla or at the angle of the scapula. The second forms the early diastolic murmur, runs off into the second sound like the murmur of aortic regurgitation, and tends to die out in the cardiac silence. Its seat of maximum intensity is not uncommonly the junction of the left fourth costal cartilage with the sternum, and it may sometimes be heard here disassociated from its presystolic companion. It is generally shorter and rougher than the aortic regurgitant murmur, but is rarely as rough as the presystolic, and sounds more like the untrilled "r." It may easily be confounded with the former when this is inaudible over the base of the heart.

Still a third diastolic mitral murmur occurs isolated in the diastolic periods, usually nearer to the second

sound than to the first. It is of longer duration than the second sound, usually feeble, limited to the region of the presystolic murmur, and is independent of any reduplication of the second sound heard at the base of the heart. The three murmurs might be conveniently termed the "early," "mid," and "late," diastolic murmurs. They may exist separately or combined in various ways. Thus we may have a continuous but uneven murmur filling up the whole diastolic period. Bristowe believes that the three murmurs are really parts of one potential murmur—*i.e.*, are but fitful and accidental roarings of one continuous torrent. This view is confirmed by the fact that each is liable to come and go as no other organic murmurs do; and that they, and especially the last two, are apt to replace one another. Again, though the first two are usually feeble and indeterminate, yet when both are present, and are, moreover, combined with the last, they present all the vibratile roughness which is characteristic of the presystolic murmur. In some cases he found the roughest and loudest portion of the whole-length diastolic murmur to be the middle half.

The second sound of the heart is to be studied in connection with mitral obstructive disease. As in mitral regurgitation the second sound over the pulmonary area becomes accentuated, and that over the aortic area is unchanged or enfeebled. Over the apex it is still weaker, though the author cannot remember an instance in which he has failed to hear it in this locality. A reduplication of the second sound frequently accompanies mitral obstruction, but is a variable phenomenon, and is apt to come and go in the same case. When present, it is heard most distinctly at the base of the heart near the aortic valves, since it seems to be due to their lagging. Reduplication of the second sound, heard only at the apex is an impossibility, and the mid-diastolic murmur which is, as stated, audible only in this vicinity, cannot therefore be an instance of this phenomenon.

The presence of a thrill at or near the position of the apex beat has always been regarded as characteristic of the forward rush of blood through a contracted mitral orifice, whether or not the rush produced any audible sound. Sometimes, however, the only or the most marked thrill seems to accompany the ventricular systole.

It is by no means common to find a regurgitant and an obstructive mitral murmur associated, and made continuous by the intervention of the first sound of the heart; although they are entirely distinct from each other in their nature, position, and rhythm. The presystolic murmur precedes the carotid pulse, is always rough, increases in intensity as it runs up to the moment of the apex beat, and blends with the first sound. It is heard over a very small area.

The systolic murmur begins with the apex beat and the carotid pulse, is musical or blowing, and dies away into silence. It is quite widely diffused, and may be heard in the axilla, at the angle of the scapula, and over the base of the heart, as well as over the area for the presystolic murmur. Sometimes the systolic is combined with the early diastolic murmur.

Regarding the manner in which the obstructive mitral murmurs are produced, Bristowe agrees fully with the explanation given by Gairdner years ago, viz., that they are due to the rhythmic vibration of the blood passing from the auricle through the contracted mitral orifice. The presystolic murmur is coarser and louder than the other two because the systole of the auricle immediately precedes that of the ventricle, and increases the force of the blood current from the former to the latter. That the early and mid diastolic murmurs are produced in this way no one has denied, and there seems no good reason to believe that the presystolic is not developed in the same manner. The author devotes some space to the discussion of his grounds for this view, and to the arguments of others who hold different opinions.

He then considers briefly hemic murmurs, which strikingly resemble in many respects the group of mitral obstructive murmurs. They are sharp and rough, more "scratchy" than the latter, and are generally best heard at the apex, thence into the second and third interspaces, and are even perhaps prolonged a little way down the left border of the sternum. They are so rough that they resemble pericardial friction. Sometimes they occupy the whole of the systolic period; sometimes they begin with the first sound and die away like a murmur of mitral regurgitation, and sometimes they occupy only the latter part of the systolic period, and, increasing in force, run into the second sound. The author does not know how they are produced, but thinks the cause is somewhat of due relation between the quantity of blood expelled from the ventricle and the size and tension of the pulmonary artery.

Howell has shown that the belief that an isolated frog's heart beats because it is directly nourished by the proteids of the serum which is supplied to it, must be modified, to some extent. He finds that the inorganic salts of serum, when alone, and present in proper proportions to each other, are capable of keeping the heart beating for many hours, and this fact is sufficient to explain, in part at least, the so-called nutritive action of serum on the heart. After experimenting with the proteids, it was found that the beating heart consumes a very minute amount of proteid, if any at all, from the circulating liquid. This adds to the improbability of the view usually adopted, that the contractions of the heart under such circumstances are dependent upon the direct assimilation of serum albumin from the circulating liquid, and tends to confirm the conclusion that the constituents of the serum immediately concerned in starting the series of changes which precede the heart-beat are the inorganic salts, and especially the salts of calcium. Similar conclusions were reached in the case of milk, and of gastric juice; with the salts of the saliva the action was much less favorable than with those above mentioned. It is claimed that the experiments described prove that the inorganic salts of the blood act as a chemical stimulus to heart muscle or nerve, but they seem to support such an hypothesis, and lead us to think that the old theory of the causation of the heart-beat may not be so entirely beyond question as modern physiologists have assumed.

In valvular disease of the heart hypertrophy of the cardiac muscle is a salutary process through which the heart is able to overcome by increased energy the defects caused by crippled valves or orifices. Did the enlargement not occur the organ would soon succumb to its increasing burdens and life would cease. With enlargement it is often able, in cases of more progressive valvular disease, to maintain the circulatory equilibrium for an indefinite time and prolong the life and preserve the comfort and usefulness of the individual. It is especially true that in the treatment of aortic insufficiency the labors of the physician should not be directed against this compensative hypertrophy. The ordinary heart tonics or stimulants are not only not useful, they are harmful. Agents and influences that quiet and reduce the force of the heart's beat are, on the other hand, very often indicated. For example, one often meets with cases of aortic regurgitation with great cardiac hypertrophy, where the irritability of the heart is greatly in-

creased and where, usually, insignificant exciting causes induce attacks of violent palpitation extremely distressing to the patient.

Veratrum viride, Norwood's tincture, in drop doses of the tincture administered hourly will often achieve most satisfactory results. Such remedies, however, are only of temporary benefit, and can only do harm if used persistently. Should undue action of the heart recur with great frequency and under only slight provocation, the addition of a full dose of bromide is often of marked advantage. Often a period of long quiescence may be secured by continuing the bromide for some days after the subsidence of the attack. Digitalis, strophanthus, etc., will often bring about the same results in slowing the excited heart-action carefully used, but these drugs are less efficacious than aconite and veratrum viride should never be given if there is compensative hypertrophy.

While aortic insufficiency continues compensated, the use of drugs having direct action upon the heart, except as just indicated, is nearly always injudicious. Our efforts should be directed towards rendering its task less difficult by teaching our patient how to avoid those influences which make its burdens harder to bear. These efforts should take two directions. Protect the heart from a continuation or recurrence of those injuries that have determined the original disordered action, and guard against conditions that throw additional stress upon it. Recurrent attacks of rheumatism or gout should be averted by timely hygienic measures. Undue cardiac excitement may be averted by avoidance of prolonged and violent physical effort. Systematic athletic exercises under judicious direction is beneficial, but the active exertion of football, baseball, tennis, rowing, running, la-crosse should be prohibited. The hod-carrier, the stevedore, the porter must find other occupations. The man of leisure may prolong his life in comparative comfort for many years. The laborer who must work without reference to his physical defects is often hurried along the road to death. The rules do not always hold, however; we often see steady progress in those whose circumstances permit the most zealous care, and are astonished to see exhausting labor performed by men who have for years had aortic insufficiency with corresponding cardiac hypertrophy. The danger of sudden death from syncope should never be forgotten, and all precaution should be taken to protect the heart from the sudden over-distention that is the cause of it. Violent passion, violent effort, violent emotions have often precipitated the fatal seizure. As the cardiac hypertrophy reaches that degree where relative insufficiency of the mitral valve is induced or when the hypertrophied muscle slowly degenerates and yields to the ever-increasing eccentric pressure within the ventricle, the dangers of passive venous hyperemia are added to those already present, and our remedial efforts must be directed against the new order of things. Agents that depress the heart's energy must now be carefully avoided, and those that increase its power resorted to. Digitalis, strophanthus, convallaria, caffeine, and the series of so-called heart tonics should be employed. Unhappily, one cannot often obtain the favorable results so frequently seen to follow the use of these agents in cardiac dilatation and degeneration following mitral insufficiency or the changes of advanced life. The combined valvular defects render these offices more difficult. They should be employed, however, for often their good effects may be observed. After mitral insufficiency and excessive uncompensated dilatation have become established, the general treatment practically becomes that of ordinary uncompensated mitral regurgitation, but with more incessant watchfulness.

Haas made a careful study of the action of tincture of strophanthus upon the visible, tactile, and graphic cardiac impulse. Fraser's tincture was used in doses of ten to twenty, or even up to thirty drops. No dangerous symptoms or cumulative action appeared, the appetite improved under its administration, which is in contrast to digitalis in many cases.

With other observers he found the pulse slowed, and the patients improved under its use. As a diuretic it was successful in cases in which digitalis had been without avail. In order to observe the effect of strophanthus on the cardiac impulse only, three patients were used who showed a cardiac impulse which could be recognized by the eye and hand, when the patient was lying down; care was taken to observe the effect of a sitting posture or standing upon the cardiac impulse; curves of both the cardiac impulse and the respiration were taken at the same time.

Before giving any dose it was necessary to study carefully the cardiograms characteristic of that individual. After this had been done, thirty to seventy drops of tincture of strophanthus were given, distributed over one or two days, curves were then taken for several successive days. After the effect of the new drug had passed off, it was repeated, and after a sufficient number of observations had been taken, and an interval allowed, digitalis was given, and the cardiograms of the two drugs were compared.

The results of the observations in all of the above (more than twenty cases) were very similar. It seems that five hours after the administration of tincture of strophanthus the character of the apex beat changes, it becomes ten to twenty beats slower per minute; the heart beat is quieter, and the impulse is weaker.

The softening of the blow in the intercostal spaces is noticeable both to eye and finger, as well as to the open hand applied to the chest.

In all cases in which there was not considerable hypertrophy of the heart, its lessened activity rapidly went so far that the point of the cardiac pulsation was found only with difficulty, or not at all. This action was observed in all cases for a longer or shorter time, according to the dose or the amount of hypertrophy.

Dr. Haas considers the action of strophanthus to be one which diminishes the activity of the heart's muscle, as well as of the muscular layer of the blood-vessels; an action, in other words, not similar to that of digitalis, but directly the opposite. He thinks it doubtful, in the light of his observations, if strophanthus increases the blood-pressure, notwithstanding Fraser's observations showing that the heart's muscle is stimulated to make stronger contractions under the influence of this drug.

Sansom takes up the category of cases, twenty-nine in number, in which the rapid heart was associated with some of the phenomena of Graves's disease; and, after reporting some cases in detail, gives a summary of the symptoms seen in all of them. (a) In regard to the circulatory phenomena, the maximum pulse-rate varied from 108 to 200; systolic murmurs were present in over half the cases, and in a few instances there were signs of organic disease of the heart. The pulse-tracing showed that the rapid pulse had in some cases the same characters as those described in the first class, while in others it was extremely irregular. The author does not think that this irregularity of the pulse in Graves's disease has been sufficiently brought into prominence. (b) Palpitation was complained of by more than half of the patients. (c) The probably disposing causes were

of the same nature as in the first class, though in a number of cases the onset was gradual, and no disposing cause could be assigned. The heart signs were the first to be noticed in the majority of cases. (d) Of the associated symptoms those on which the author lays the most importance were muscular tremors, defects of hearing, glycosuria, and severe perspirations, though others are mentioned.

Without entering fully into the question of the precise pathology of rapid heart, he thinks the evidence adduced is sufficient to make it in the highest degree probable that the two classes of cases described are closely allied. In both there is present the initiatory influence of psychical or physical overstrain, while in both the condition may develop without any such influence. In both too, there is ground to believe that organic disease of the heart may be secondary to the nervous implication. He does not think that we should look upon cases of rapid heart as abortive forms of Graves's disease, but rather that the latter is an extended form of the former. The difference seems to be one of the extent of nervous implication rather than of the intensity of it. The signs of more extensive involvement of the nervous system are disturbance of the vaso-motor conditions of the great arteries of the neck, like disturbance in the thyroid arteries; a similar affection of the post-orbital arteries. In the first class of cases—in which cardio-motor conditions were disturbed without local vaso-motor involvements—it is to be noted that murmurs over the great vessels emerging from the heart were far less frequent than in the second class. It seems probable that a disturbed correlation between the heart and arteries was indicated by the existence of these murmurs. Concurrently with any or all of the signs mentioned may be an implication of the motor area, leading to muscular tremors, and in some cases there may be an impairment of the powers of the mind.

In these cases Sansom has found digitalis and heart tonics generally of great value in the milder cases, but useless in severe ones. In these latter the systematic application of the galvanic current in the region of the great nerves of the neck has been very serviceable.

THE STUDY OF FOOD AND ITS ADULTERATIONS.

BY A. M. LEONARD, M.D.

IN view of the efforts now being made by the government to determine the effects of the various adulterants upon staple articles of food, it is appropriate to see what has been done elsewhere. First, taking up food for diseased conditions, we know that the so-called "gluten flours" are not all that they should be, and that the first thing in the treatment of diabetes is the avoidance of starches and sugar. It is now known that it is the form and taste of bread which are desired by the patient, and not that starch is craved by the stomach and intestines. I report two forms of bread; the first is simply an improvement on those now in use, but has the merit of being cheap and easily made. The recipe is: one cup of Graham flour; one cup of the best bran previously scalded with one cup of boiling water; two eggs; German yeast or baking powder; salt to taste; one cup of milk or water. To be mixed with a spoon. This bread contains 17.72 per cent. of starch, equalling 19.68 per cent. of sugar. The second bread is a great improvement on those ordinarily in use, but it is as yet difficult to prepare and expensive. It is made from gluten, which may be obtained from the starch factories, and ground into a fine flour. The formula for the bread is: one cup of gluten flour; one cup of the best bran previously scalded; one teaspoonful of baking powder; salt to taste; two eggs; one cup of milk or water. This bread also must be mixed with a spoon, as to use the hands would be even worse than in the making of ordinary bread. Bread thus made is palatable, nutritious, healthful, and contains only 4.57 per cent. of starch (5.08 per cent. of sugar).

Woltering gives analyses of wheat flour, and then of gluten, comparing the latter with the albumen of eggs and of flesh, and showing that it is very similar to them in chemical composition. A large quantity of gluten is produced in the manufacture of starch, but finds little employment, except in making shoemaker's paste. The formula for the preparation of bread for diabetic patients is as follows: 500 grammes of gluten flour are stirred with 1½ heaping tablespoonfuls of baking powder and sifted, and then rubbed vigorously in a bowl with a wooden spoon and ¼ liter of lukewarm water added.

Bread when prepared in this way has a somewhat bitter-sour taste, which is not prevented by the addition of eggs, milk, butter or bicarbonate of soda. Saccharin only gives an unpleasant sweetish taste. Sweet cream is, perhaps, the best ingredient for this purpose. If the bread when cut be spread with good butter and covered with ham, meat, or anchovies, it becomes very palatable; but in 24 or 48 hours this gluten bread becomes more doughy, and must then be dried; for this purpose, cut it in layers and brown in an oven until crisp.

In 1883 the authorities of Berlin decided that all fresh meat not slaughtered in the public abattoir must be inspected by competent officers before being permitted to be sold, but, it was not until April, 1887, that this was done. The most difficult task was to find suitable places for the inspection stations, and also trustworthy assistants in this work of the authorities; what was suitable for Cologne, Bremen, Hanover, and Münich, did not seem so for Berlin, and even the most careful inquiries proved at first unsatisfactory. Amongst many the feeling was that this inspection was unnecessary, and that if carried out it would endanger the fresh meat trade in the market, that the butchers' stalls in the new market would be empty, and that, on account of want of competition, the price of meat would be very much raised. Besides, it was urged that of the few butchers who might continue their trade, none would bring diseased meat to the station.

The work of inspection was commenced, and has proved most successful. At first there were eight inspection stations, all close to the main thoroughfares or railway stations where meat would arrive, and one was erected in the central abattoir itself, so as to be accessible for the eastern portion of Berlin, but the butchers from the suburbs preferred to buy either meat which had been killed, or to kill it at the public abattoir. One station, that in the central market place, is always open, but the hours for the others vary according to the work, some being required from 3 A.M. to 10 A.M., others from 12 to 7 A.M. and some from 7 A.M. to 7 P.M. when there is much work to be done. No inconsiderable amount of trouble was taken to obtain the necessary staff, which consisted of 116 persons, and these on Tuesdays and Fridays had to be supplemented by 40 to 50 meat inspectors and various veterinary surgeons. The amount of work to be done at times at one station may be shown by the number of animals inspected on one special day: 371 quarters of beef, 403 calves, 147 sheep, and 515 pigs. The veterinary surgeons and meat inspectors

were appointed six months before the opening of the stations, so that they might become familiar with the inspections at the abattoir, and thus commence their work of examination without any delay.

The stations consist of an office, two adjoining rooms, one for microscopical and one for macroscopical investigations, and an observation room for the meat; the chief of the station is a veterinary surgeon, and one of the meat inspectors, who has control over the other inspectors, taking his place when absent. As soon as the meat arrives in front of the station, the officials commence their work; the unloading of the meat by the butchers has to be watched, to see that they come in turn and that more meat is not brought in than can be inspected at one time. The butcher then pays for the inspection, and his list having been compared with the meat brought in, the inspector commences his inspection of the meat in conformity with the regulations in force. According to the condition in which the meat is found to be, it is stamped by one of the officials, and either taken away at once by the butcher and kept for further examination, or the police are communicated with and the meat detained. Every butcher obtains a printed form stating the kind of meat examined for him at the station. All lymphatic glands are especially examined for signs of tuberculosis or pneumonia, and in cases of doubt the meat is detained until it can be proved to be satisfactory.

All meat brought for inspection must be taken from animals which, before being slaughtered, have undergone examination and been certified as not suffering from disease, and this certificate is kept at the inspection station. These certificates are not always given by veterinary surgeons, but if the animals are examined by trustworthy persons accustomed to signs of health and disease in animals, that is all that is necessary.

The greatest watchfulness is needed to prevent meat being sold as inspected meat until after examination, and to insure that all fresh meat does really come to the station as soon as it arrives in Berlin; in these matters the police and railway officials are of great service. At times evasion of the regulations takes place, but it is almost impossible to prevent it in a large commercial city; but very much has been done to insure that all the chief butler's stalls and shops shall only contain inspected meat, and it is hoped later to control all meat which is prepared in hotels and eating houses, and even still further, to inspect all materials used for such food as sausages, preserved meats, and ham. Until this regulation is enforced, meat which is diseased and that which is not inspected will be used for such purposes without it being possible to prevent it.

It happened once that a butcher from the suburbs brought a quantity of meat to one of the inspection stations, and while this was being examined, one of the officials informed the presiding veterinary surgeon that on the cart outside was a whole pig which had been slaughtered. The butcher then stated that this was for a restaurant, and did not come under the law of inspection, but the veterinary surgeon ordered a mark to be placed on the pig and the cart to be followed, so as to ascertain the truth of the butcher's statement. Instead, however, of taking it to a restaurant, he took it to his own stall in the market, where the officials from the station took possession of it, and when examined it was found to be extensively diseased. There was no doubt the butcher knew its condition, and thought to escape inspection by making such a statement. Very many similar cases were discovered and punishment inflicted, but it is certain many others escaped detection, since, if meat is found at a butcher's which has not been examined, he can state it is to be manufactured into sausages, and nothing more can be done, even though it is probable the meat is afterward sold as fresh meat.

The fresh meat trade, however, which was thought to be endangered by this system of inspection has, during the past year increased rather than diminished, and the price of meat has not risen; indeed, the cost of dead meat is less than the original cost of living animals at the market. The meat inspection in the provinces has also been more carefully performed since irregularities were discovered as the result of inspection of meat brought to Berlin, and thus a marked improvement has taken place in the meat trade with the provinces. The total number of animals examined during the year was 91,610 sheep, 99,691 pigs, 143,955 calves, and 103,359 quarters of beef. Of the meat rejected and handed over to the police as unfit for food very much contained tubercle; trichinæ and measles were present in the pork 18 and 78 times, respectively, while in more than 1,000 calves the meat was too watery to be fit for food, in some, echinococci were found; in others, thread-worms; and a great deal of meat was detained on account of its having become decomposed. In 30 cases the officials belonging to the inspection stations detected meat exposed for sale that had not been inspected, or that had already been confiscated by the police.

Laffan has studied the value of beef-tea from a double standpoint; (1) as a nutrient, and (2) as a mere stimulant and flavorer. It is in the first category that it has been placed by a large number of the profession. Liebig states that the greatest care is taken to exclude from his extract all fibrin, gelatine, albumen, and fat. He further adds that its component parts do not give strength where there is none, and that to extractives and salts is due all the value it possesses; that it is to be classed with tea and coffee; and that it neither economizes carbon for our temperature nor nitrogen for the sustenance of our tissues. As to the difference between ordinary beef-tea and his extract of meat, he merely claims for the latter that it contains less water than the former.

We have in beef-tea kreatine, carmine, inosite and other quarternary products, which so entirely resemble, or are so nearly allied to those found in urine that their small value hardly admits of question; and it is not a matter for surprise that there should be so striking a family resemblance in odor between the two. The saline matters alone, plus the hot fluid, are, therefore, left to play the most considerable, if not the only, role in the value of beef-tea.

Hassall, long ago, showed that 14½ pounds would be required to yield beef-tea enough to supply the nitrogenous daily waste of one individual, calculating that such waste amounts to 512 grains of urea and 21 of uric acid daily. Experiments made on dogs have brought out the remarkable fact that they die sooner when fed exclusively on Liebig's extract than when left unfed. There are three leading methods for manufacturing the article under discussion. Under one method, the heat is kept below the coagulating point of albumen. Under the second method, the heat is carried above the coagulating point of albumen. Under the third method, the meat is merely macerated, and no heat at all is applied. This extracts a larger percentage of juice than is attainable by the application of heat.

When treated by cold water the meat yields up six parts per hundred, and under boiling water only three parts per hundred. Another method proceeds on a

different basis. One pound of meat to four pints of water is simmered for five or six hours. It is strained, and any portion not small enough to pass through the colander is further broken up until it is enabled to do so. This article is infinitely richer than ordinary beef-tea, but where solid food is inadmissible, its admnistration requires further investigation.

Kuhne states that while the intestine juice would dissolve raw albumen and fibrin, it would not act on boiled albumen and fibrin unless the latter were first subjected to the action of the pancreatic juice. When the latter, however, was the case, the dissolving process took place quicker than even when the meat was raw. Now taking the analysis of Hassall who found only 22.1 grains of nitrogen in each pint of beef-tea (one pound to the pint) made under the boiling and 41.1 grains made under the infusing process, and the further opinions of See and Liebig, it is quite plain that we have in beef-tea properly prepared, no value whatever commensurate with the cost, and an insignificant nutrient for the sustenance of the sick.

If beef-tea then affords such small acid, what shall be used? The first and chief resource in the way of liquid food is, of course, milk. The next substitute for beef-tea is minced raw meat. When we find ths successfully employed in conditions of the system in which superficial ulceration of the intestinal membrane constitutes the essential feature, and where that membrane is still more acutely inflamed, as in the infantile cholera of summer, it is hard to set limits to the cases to which its employment may not be applicable.

Lastly, we have rectal alimentation, to supplement any deficiencies of mere fluid ingesta, such as Leube's pancreatic emulsion. Milk will be found applicable to the great majority of cases, while one or more of the others may find their utility in a percentage of cases.

A STUDY OF INFLUENZA.

BY J. R. NICHOLS, M.D., TERRELL, TEX.

INFLUENZA is regarded as a microbic disease, and it is generally presumed that the bacillus discovered by Pfeiffer is the exciting cause, but there is a difference of opinion on that point. It is pandemic, epidemic and sporadic, having been observed in Europe for many centuries, and of late years in this country; however, it may have been prevalent for some time, but not recognized by the medical profession.

Climatic and telluric conditions are especially to be considered in any epidemic, as cloudiness, damp weather, sudden changes in the temperature and variation in barometric pressure, are factors for an increased number of cases in any community.

It is peculiar, in that an attack does not produce immunity; in fact, favors the prospect of a recurrence. A certain per cent. of any population is immune, due to the natural resistance which is in proportion to the virulence of the bacillus and the favorable conditions for its propagation which necessarily governs the severity of the disease; therefore, we can readily understand why some localities have mild and others severe epidemics. Complications and sequelæ are more to be dreaded and expected in the latter.

The susceptibility of the infirm, senility, infancy, previous functional and organic diseases figure conspicuously in the predisposing causes; also those individuals that have a well-marked gouty diathesis.

The symptomatology presents many various phenomena and it has been termed the hysteria of epidemic diseases. It seems to be no respecter of any tissues or organ, and often makes a complete triumphant invasion. It is very common nowadays for the laity to attribute all their ills to "grip" and the sequelæ of the same, and the diagnosis is made and told the physician either in the office or on his arrival at the bedside. The onset in the majority of cases involves the cerebrospinal and respiratory systems, the former symptoms predominating in the initiatory stage. The usual clinical observation is as follows: History of distinct chill or chilly sensation, general mailaise, extreme aching of voluntary muscles referred to scapular, dorsal and lumbar regions, also lower extremities, described as soreness. Headache, frontal or occipital, with some photophobia and mucous membrane of conjunctiva and respiratory organs, usually affected with a feeling of tightness and constriction of chest, is elicited. Tonsillitis and pharyngitis, often marked, and constant pain referred to throat, which is increased on deglutition. Special characteristics, as extreme prostration, which is very perceptible on the slightest exertion, described by the patient as weakness and loss of strength, which produces a state of uneasiness on his part, sometimes bordering on simple melancholia. The temperature curve varies, usually expect 1 to 3½°, and if no serious complications occur it will subside in a few days by lysis. Continuous high temperature is probably due to toxemia and deficient elimination, which increases the nervous manifestations. It does not follow that fever is the typical symptom, as cases occur with normal and occasional subnormal temperature. The condition of the integument is observed to be dry and moist at times, the former being the more frequent. In examining the tongue you do not find it dry and parched with sordes on gums, teeth and lips; but instead it is coated, but not brown, and with some indication of being moist. Stomach is irritable, and vomiting is not common, but anorexia is pronounced. Constipation does not occur so often as you would expect, and the bowels are often stated as being regular.

Complications are anticipated, but they are not so frequent. Pneumonia of a catarrhal type may invade one or both lungs, but physical signs are not typical and it usually is more to be apprehended in old and young people.

Different varieties of cardiac neuroses may be expected; also endo-, myo- and peri-carditis. Most frequent complications affecting the nervous system are cerebrospinal meningitis, meningitis, myelitis, melancholia, hysteria, neurasthenia, and neuritis. They are not present in the initiatory stage, usually appearing after the acute symptoms have subsided and recovery of these serious conditions progress as recuperation takes place.

The above list of diseases readily indicates what effects the toxemia has upon the system. Gastro-intestinal disorders are sometimes sources of anxiety, as stomatitis, gastritis and enteritis, also nervous vomiting, probably due to disturbance of center located in medulla oblongata. Some cases may present one of the varieties of nephritis, produced by irritation of the uriniferous tubules, from elimination of excretory products, but this condition is sometimes present in other infectious diseases.

The after effects or sequelæ are of short duration, but this must not be accepted as a fundamental rule. It is now observed by the profession that the majority of our cases pursue a favorable course. It must not be overlooked that influenza occasionally rekindles a dormant inactivity of some unforeseen organic disease, which

comes forth with renewed vigor and hastens our patients to their untimely demise. Then, again, this disease is frequently engrafted on other acute or chronic ailments which is not at all encouraging and necessitates a guarded prognosis.

It goes without contradiction that when the intercurrent conditions are pronounced our mortality per cent. will be greatly increased. A clear conscience is a source of much comfort, as we fully realize that the diminished vitality and extreme prostration upon an already impaired constitution is more than any human being could withstand.

Cases are observed in which there is a perceptible lack of energy, with undue readiness to fatigue and loss of appetite, consequently diminished weight and anemia follow.

There is no other disease in which the sequelæ are so pronounced except diphtheria. These conditions have been studied very scientifically during the past twelve years. Previous to that time our knowledge is meager.

Functional derangements of the nervous system are not unusual, and are due to direct effects of toxemia. Mental derangements are sometimes observed, such as melancholia, delirium, hypochondriacal states, with occasional delusions and suicidal tendencies. Mental dullness and dementia are usually confined to senile cases. Types of melancholia are more prolonged; the other varieties are transient. Hysteria is aggravated, and states of trance or cataleptic stage may occur, and this condition generally follows the febrile stage. The presence of epileptic convulsions have been reported in some cases during the acute stage and recurred after a long period of quiescence.

The brachial plexus, intercostal and sciatic nerves often take on a neuritis, the multiple variety being unusual. A predisposition to a gouty diathesis is a forerunner of rheumatism, which is fibrous in character. This inflammation may become severe about articular surfaces and involve them, thereby simulating the articular variety, and might result in rheumatoid arthritis. Cerebral meningitis may develop. The cranial nerves are seldom affected, however; optic neuritis, irregular cardiac action and vomiting without nausea are examples of this type. Otitis media and abscess formation are to be apprehended and are trying conditions.

The diagnosis of influenza is not always possible, and no doubt many of us have felt the want of increased knowledge and experience. Those who are expert in microscopy can make examinations to clear up the mist, but the general practitioner has to depend on previous observation, judgment and recognized reference books to aid him in his diagnosis. If an epidemic is prevalent the problem is not so difficult. The above remarks have reference to masked types. An important point to bear in mind is the extreme prostration and depression of spirits is out of proportion to what is observed in other diseases affecting similar structures. We must differentiate by excluding acute follicular tonsillitis, acute muscular rheumatism or myositis, intermittent, malarial, typhoid, dengue and cerebro-spinal fevers; also measles in children before the eruption appears.

Uncomplicated cases run a favorable course, the death rate being practically nil. If serious complications occur the mortality per cent. is increased and the prognosis must be guarded. It is well to remember that existing functional or organic diseases, also constitution and age, figure prominently in the death rate. The proper management and treatment of influenza is simple and better understood than the symptomatology. It should be our aim to use supportive measures and stimulate the secretions and excretions. Instructions should be given about clothing and the necessity of being warmly clad; also that unnecessary exposure is not beneficial and favors relapse and complications. A preliminary cathartic is always necessary, and the best to be selected is either a saline or mercurial. I prefer for this geographical area fractional doses of calomel. It acts as an indirect cholagogue, intestinal antiseptic, diuretic and gastric sedative. There are many agents that can be used with satisfaction in different combinations and to suit the condition of the patient and the intensity of the attack. I seldom administer more than any of the following three in one prescription, as phenacetine, acetanilid, salicin, sodium benzoate, sodium salicylate, Dover's powders, pilocarpine, salol and quinine sulphate. Stimulating agents are usually indicated and can be alternated with any of the above combinations. I generally prescribe strychnine and spirituous frumentum with some palatable vehicle. It is necessary to use expectorants if a severe bronchitis exists, and the ammonia preparations are the best if gastric irritability is not present. The application of cold compresses externally to the throat, and using chipped ice internally, produces a soothing effect for the pain and discomfort caused by the existing tonsillitis and pharyngitis. There is no objection to antiseptic gargles, and they are exceptionally valuable from a psychological standpoint. In regard to the dietary, it is best to administer easily assimilating food, especially of fluid consistency. In addition, it is important to keep the intestines in a soluble condition. Insist on quietude and relative rest, but it is not always possible to have our patients carry out this instruction, as many of them will insist on remaining up and attending to business matters—so-called "walking cases." During the period of recuperation give an invigorating tonic suitable to the individual case, and advise the importance of unnecessary exposure and overexertion, which are frequent causes of a relapse. All complications and sequelæ of a serious nature require important consideration, especially when the influenza *per se*, is of minor importance. When the diagnosis of these conditions is made it is always best to manage same as if it was the true disease. I consider it feasible to pursue this plan along with the basis of treatment now accepted in the ordinary type of la grippe. The laity are perfectly satisfied with the outcome of "grip," either for better or worse, and the profession is not so readily criticized as they realize that a severe attack is often fatal, especially when serious complications exist.

ERUPTIVE FEVERS.

BY T. J. FORHAN, M.D., TRINIDAD, COLO.

THE subject of my paper, which is written with special reference to smallpox and its differentiation was suggested by the frequency and self-confidence with which the laity object to diagnoses made by physicians in eruptive fevers, the persistency with which they adhere to their opinions being at times most irritating. Their objection is, however, to some extent excusable, for not infrequently in the public press and in medical journals differences of opinion are noted even amongst physicians. The great body of people outside the pale of our profession assume more or less knowledge of the maladies which affect humanity, causing much annoyance and placing on the defensive those whose opinions should rarely be questioned. Those self-opinionated people make further mischief by throwing obstacles in the way of compliance with laws enacted for the prevention

and spread of these maladies. This condition exists not amongst the ignorant and illiterate alone, but ofttimes amongst those whose intelligence is undoubted. Local prejudices and customs also become factors rendering inoperative the efforts of physicians. As an example of this it may be stated that among the Mexican people of Southern Colorado, while no advice is given by church or clergy to "take" smallpox, the opinion prevails that the scourge comes from on high and that the infection will afford them a better chance of salvation. These old-time prejudices are, however, fast disappearing, since many Mexicans with their children now seek vaccination and make no objection when house to house calls are made for this purpose.

To prevent so far as possible the temptation to designate by a milder name one of the most severe exanthems it would be well to exclude from our nomenclature "Cuban itch." "Porto Rican itch," "Philippine measles" and, that most dangerous of all, varioloid, which may become the focus of an epidemic as fatal in its results as malignant variola.

The predisposing causes of the acute eruptive exanthemata, variola, rubeola, rubella, varicella and scarlatina are not well understood and their origin is equally uncertain. All are more or less contagious and infectious and excepting variola peculiar to childhood. If means of isolation are not taken they are all prone to prevail epidemically, in which event suspicion is aroused as to the character of the malady. Atypical or unusual forms appearing sporadically become most uncertain of recognition and therefore a greater menace to the health of a community.

In differentiating eruptive fevers, while observance of constitutional symptoms in the initial stages afford much information, and become valuable guides, it is after all the eruption which requires the closest scrutiny since it is the most constant and conspicuous feature as it is most unvarying in character. The more proficient one becomes in differentiation of the rash the less he relies on constitutional symptoms. All complaints of an eruptive nature should be looked on as suspicious of smallpox and its presence excluded beyond any question of doubt before further determination be made. This course will spare the attendant much embarrassment and sometimes prevent serious consequences.

Severe persistent headache and backache with fever disappearing with the coming of a rash, macular at first and passing through successive stages as papules, vesicles and pustules affecting primarily face and hands, extending downwards and involving palms of hands and soles of feet is variola. The period of incubation is 14 days, of invasion three days. Eruption appears first on forehead and almost at same time on hands. It settles like a cloud with the hands raised level with the head, in measles with the hands by the sides. The back is perhaps the best location to make a close examination of the rash, as it is not obscured by scratching. When the eruption first appears it consists of small intensely red macules, varying from one-eighth to one-fourth of an inch in diameter, readily disappearing on pressure. In 24 hours these are followed by papules of a peculiarly hard shot-like feel. Later the papules become vesicles with thick walls which assume a milky appearance in 24 hours and finally develop into pustules. The vesicles are not readily evacuated and are multicellular. The peculiar and pathognomic feature of the rash is its appearance on palms of hands and soles of feet. It is also most marked on exposed surfaces. Fever disappears with onset of the rash and this is of much importance as it occurs in no other of the exanthemata, but on the contrary as in measles the fever increases with appearance of the rash. In the colored race the papule assumes a whitish hue due to tension of its cell walls.

As the vesicle enlarges a central depression or umbilication appears which is characteristic of smallpox, but this is sometimes observed in chickenpox, as the result of irritation. In the latter, however, the lesion is unicellular and easily evacuated. Umbilication disappears with full development of the pustule on the eighth day, the twelfth of the disease, after which subsidence is observed, the rash forming crusts, desiccation following with recovery in about 20 days. Dating from this period in two weeks the patient can be released.

Smallpox in the early stages of an atypical case bears much similarity to varicella with which it is most usually confounded. Varicella is exceedingly rare in adults, in fact its existence is doubted, and rarely appears in children over ten years. The stage of incubation is about 14 days. In the prodromal stage there is usually no evidence of infection and no derangement of the usual health is observed before the rash appears, which offers a striking contrast to that presented by even the mildest case of variola. It appears first on back, principally over scapular areas on trunk, upper and lower extremities, evolution of the spots being rapid. The vesicle is sometimes multicellular, but the trabeculæ are less numerous and offer slight resistance to evacuation. The eruption is polymorphous, non-indurated and several crops appear at intervals.

Measles is more contagious during the incubative and prodromal stages, smallpox more during that of desiccation and desquamation. Measles is therefore more liable to become epidemic, as many are exposed before the nature of the affection is determined. It is peculiarly a disease of the mucous membrane, which also offers the best field for pathological manifestations presenting as it does the first visible change. Differentiation should not afford much difficulty. Children under one year old are not prone to develop the affection and in adults it is usually severe. In old and young special watchfulness is needed, since none of the exanthemata is so prolific of serious complications, as not a tissue nor an organ of the body escapes its morbid processes. The first eruptive lesions appear on forehead extending downwards and appear like insect bites. Suffusion of eyes, coryza, photophobia and cough are marked. The catarrhal symptoms increase in severity with development of the rash after which, when fully so, the constitutional symptoms subside, giving place after the fifth day of the eruption to a slight branny desquamation.

Much importance has been attached by clinicians to red, irregular spots with a bluish white center, appearing on mucous membrane of mouth—palate, uvula, fauces and cheeks—from 12 hours to five days before appearance of rash, after which period they fade. When present they are said to be pathognomonic of measles.

Rubella is a mild epidemic contagious and slightly infectious eruptive disorder of short duration, disappearing in a few days. As compared with kindred disorders it is comparatively rare. It is usually epidemic, sporadic cases being rare, due, no doubt, to the slight extent to which it is infective. Deviation from its typical course would indicate complications or some abnormal sensibility. A diffuse redness of the throat is observed. The most important and constant diagnostic symptom is glandular enlargement, involving the axillary inguinal maxillary and particularly the post-cervical glands. The eruption appears as faint pinkish maculæ, attaining full development in about 12 hours, fading

at points first involved before full progress is made, so that while maturing on body it may have disappeared from face. The color of the rash is lighter than that of scarlet fever, slightly elevated, uniform in color and form to the eye a composite picture of measles and scarlatina without any of the characteristic features of either. The period of desquamation commences soon after appearance of the eruption, following it in development and is completed in about five days.

Scarlatina is perhaps the most eccentric of all eruptive fevers. No opinion can be formed from the early symptoms as to mildness or gravity of the attack, which as a rule is sudden. The germs are long-lived and thorough disinfection is of great importance. The eruption follows no fixed course and is not constant as regards character or duration. It is most marked on neck, chest, abdomen and back of hands, a striking pallor of face being observed, particularly around nose and mouth. It is bright red or scarlet in color and if examined with a magnifying glass will appear as bright spots occupying the site of the hair follicles, pin point in size, translucent vesicles, separated by small areas of pale skin. By the second or third day a bright scarlet blush covers the entire body on which with the end of a pen holder or dull pencil point letters or characters can be plainly written, appearing as white lines on a scarlet ground. The strawberry tongue with prominence and enlargement of its papillæ completes a picture unequaled as a type by any of the eruptive fevers previously mentioned. There should be but small difficulty in differentiating variola and scarlatina. The only period of similitude being the early manifestation of the prodromal stage when the erythema variolosum of the former sometimes appears like the scarlet rash of the latter. Conflict of opinion, if any exist between the unprofessional and professional, is mostly caused by the mildness of sporadic and epidemic cases of smallpox. A great many people expressing themselves as preferring its infection than to incur what they consider the inconvenience and dangers of vaccination. There are few or many reasons for this mildness of an infection which in years past has been so fatal. Has humanity acquired by some means a greater tolerance of the infection or has the *materies morbi* become itself attenuated and become no longer capable of perfecting its ravages? Those of you who are acquainted with the possibilities know how much more prolific is a virgin soil than that which has been cultivated for many years. Is it not possible that the analogy holds good as to the human organism? It is the opinion of a few syphilographers that leprosy is only a grave syphilitic lesion implanted on a virgin soil. May it not be that the human organism, by years of tolerance acquired by repeated vaccinations, is no longer as seriously impressed by the specific germ, or is it not possible that the germ itself has lost its power? It is true that better homes, dress and food with more perfect sanitation play no unimportant part as the instrument of more perfect organisms. Does the evolution of the pathogenic microorganisms keep pace with that of human kind and continue a menace to health and life? Is it not recognized as a law of evolution that all living organisms must adapt themselves to their environment and if so does not such adaption demand differentiation of type and species? Assuming that the causative factor of the exanthemata lesion mentioned is a specific microorganism, is it not reasonable to suppose that by reason of its non-adaptation to environment by progressive evolution it has lost its morbidity and that the host is correspondingly more or less immune? There is no law governing one that will not govern both, and the vital decay of one—the germ—with increased vitality, of the other—the human organism—becomes the latter's safety. If vitality of the smallpox germ had increased and ours diminished the ravages of the affection would increase correspondingly. There is ample proof of organic evolution and it is not impossible to conceive that germs once possessed of virulent properties can vary in type and species and thereby in its pathogenic effects. The higher the type the less is it amenable to evolutionary law and *vice versa*, thus the greater probability of less evolutionary changes in the specific germs causative of diseased conditions. It would be well if we devoted more time to the study of evolution of the germ as of the animal, a study biologically rather than of the specific microscopic forms. Does the microscope reveal all? From the highest to the lowest forms of life the one becomes the victim of the other. Is it not possible that there are vital changes which the microscope cannot reveal and that by and by they can be discovered by better means and the theories of to-day bear the same relation to those of the future that ours bear to the dark past?

CLINICAL NOTES ON CERTAIN DISEASES OF THE SKIN.

BY WILLIAM GORDON, M.D.

THE peculiar condition produced by alopecia is undoubtedly due to disturbances of the circulation, as brought out by Behrends some years ago. Against this theory is the practical evidence of the appearance of circumscribed patches of redness in some cases preceding the fall of hair. Possibly the trophic nerves are involved in some way. Joseph was able to produce alopecia in animals by section of the posterior branch of the second cervical nerve, while Olliver found some cases following profound outbursts of the emotions. Ollivier, a great authority on this subject, has never observed contagion in this condition, and asserts that there is no reason for isolating children who suffer from the disease. In this country the consensus of opinion is that the disease is not contagious; the parasite of the contagious form, so-called, has never been isolated.

In view of the interest now being taken in the various forms of treatment of lupus by light, the relationship of this disease to tuberculosis is timely. Reeves some years ago reported on this subject the following case: "The patient, a woman of *22*, coming with a consumptive family history and symptoms of advanced phthisis, had injured the flexor tendons of one of her fingers, which became inflamed. On examination, this was found to contain pus; after it was lanced a fungoid condition developed around the wound. Some time later the finger resumed its normal size, but was still hard; there were two hard masses to be felt and seen along the flexor sheath in the palm of the hand. A portion of the fungous mass was removed for microscopic examination. The wound soon healed, but the patient died of phthisis within a few weeks. Microscopic examination of specimens from the fungous mass were found invariably to present typical giant cells of tuberculosis and countless numbers of tubercle bacilli." The criticism of this case is the want of convincing proof that the lesion of the finger was really lupus, for the history of the injury, with subsequent rapid development, is against the diagnosis of lupus. Reeves gives an account of a typical case of lupus of the ear under the care of Rohe, in which microscopic sections of the diseased tissue showed precisely the same neoplastic cellular structure as in the first case, but with fewer tubercle bacilli.

Subsequently this case developed croupous pneumonia, followed by a cavity in the left pulmonary apex. The subsequent history is not given.

The recent researches on lupus and tuberculosis of the skin have attracted much editorial attention. Schwimmer's views on the subject are opposed by the *British Medical Journal* on clinical grounds to the view of their identity, although he does not attempt to explain their respective relations to the tubercle bacillus. Doutreepont and Leloir consider the belief that lupus patients are destined to fall victims to tuberculosis of the lungs, is not borne out by facts, according to many dermatologists. Schwimmer separates tuberculosis of the skin from lupus by the following facts: First, the comparatively great rarity of tuberculosis of the skin, the relative frequency of lupus, and the difference in the development of the two processes. In ninety cases of lupus under his care he saw only five of tuberculosis of the skin. Also, tuberculosis begins almost exclusively on the mucous membranes, and from them encroaches upon the skin, while in lupus the process is almost always the opposite. Considering the different effects of lupus and tubercular affections of the skin on the general health, Schwimmer believes that of ninety cases of lupus, many of them severe, he found sixty cases in which the patients were perfectly healthy individuals and free from tuberculosis.

There is no doubt that it is true that the tubercle bacilli can remain for many years localized in the organism, as in lupus, without producing general tuberculosis; but it is different in tuberculosis of the skin, which is usually the manifestation of a previously existing constitutional affection, although it may be the first sign of that affection. Bacilli are much more rare in lupus than in tuberculosis; and the presence of bacilli alone is not sufficient to establish the identity of the disease process.

It has been reported that the bacilli of smegma even may be confounded with the tubercle bacilli, consequently some authorities ask whether the resemblance of the bacilli in lupus and tuberculosis necessarily establishes their identity.

It is true that inoculation in animals of lupus tissue produces tuberculosis, yet as far as is known these inoculations have never produced lupus. It is possible that tubercle bacilli in the skin of certain individuals may succeed in producing the distinctive process known as lupus vulgaris, while in the tissues of animals they may lead to the rapid degenerative changes constituting tuberculosis. Caustics and surgical treatment, which are of benefit to the lupus patient, do not generally assist the subject of tuberculous ulcers, which are commonly made much worse by such treatment, in fact.

Another interesting problem is the possible relationship between lupus vulgaris and carcinoma. Here Bayha, a European authority, brings together forty-two cases, in eleven of which carcinoma developed in the scars of lupus, which, of course, is in no way peculiar, while thirty-two cases of carcinoma developed from well-marked lupus. Investigation into the histology of the new growth showed enlargements from the interpapillary epithelial ingrowths into the lupus as the starting-point of the cancer. All transitions from the atypical epithelial growths to the perfectly developed epithelial cancer could be observed. It is a curious fact that carcinoma developed from the lupus is particularly malignant in character.

When it comes to the treatment outside of the x-ray and Finsen's method Kaposi is not in favor of plastic operations, as the disease is apt to involve the repaired tissue. Nitrate of silver stick is still his favorite application. With this the diseased tissues can be bored and dug out, and there is not so much danger of involving the neighboring structures indiscriminately. With deeply-seated nodules, solution of caustic potassa may first be used to destroy the epidermis, and then the nitrate of silver can be used. The following paste is a favorite formula of Kaposi: ℞. Zinc. chlorid., antimoni chlorid., aa ptes. x; pulv. rad. iris Florentin., ptes. v; acid. hydrochlor. pur., ptes. v.—M. The mixture is made as follows: The chloride of zinc and hydrochloric acid are put into a mortar, the chloride of antimony is then added, then the powdered orris and the whole is rubbed into a thick paste. Spread upon linen, it dries very quickly and the plaster thus made is cut into long, narrow strips not more than ⅛ to ½ inch in width. The chloride of antimony penetrates healthy as well as diseased skin, but does not diffuse. It has an advantage over the Vienna paste. Strips are laid on, covered over with lint, and allowed to remain on for twenty-four hours. By the end of six or eight hours patients suffer a good deal of pain, but this diminishes later. When, in twenty-four hours' time, the strips are removed, a yellowish, greenish slough is seen. This is cast off, the raw surfaces which come into view in a day or two are rather long but narrow; the opposite edges of the epidermis are very near each other; the wounds heal nicely.

In these cases it has been found that arsenic paste made according to Hebra's formula acts quickly. It destroys the diseased tissues, so that one does not have to exercise so much care in its application. Unfortunately, great pain follows the use of arsenical paste, for which Kaposi has tried the paste used by dentists in painful carious teeth—a mixture of equal parts of arsenic, creosote and opium, with the result of a fatal case, so he abandoned it. Ten per cent. ointment of pyrogallic acid is used, while to flatten scars a solution consisting of 5 parts each of iodine and iodide potassium and 10 parts glycerine is excellent. Paquelin's thermocautery has been tried, also the galvanocautery. Tuberculous ulcers are usually situated about the natural orifices, mouth, anus, etc.; more rarely the fingers and the hand or the face; more rarely still, the genitalia and lower extremities, only attacking persons already suffering from visceral tuberculosis and who have arrived at the cachectic stage. Two forms are distinguished anatomically: (1) The granulo-caseous, when the granulations formed entirely of embryonal cells occupying the derma are connected by an almost continuous infiltration of embryonal cells. The caseification occurs en masse and invades simultaneously the granulations and the intermediary infiltration. In the deeper portions of the derma the embryonal infiltration is more diffused. (2) The follicular variety, where the lesions consist in the development of tuberculous follicles, formed by a giant cell of a narrow epitheloid zone, which are not connected together by bands of embryonal infiltration, but around which the derma is transformed into a translucid substance, the disintegration of which leads to ulceration. These lesions differ from those of lupus in that the latter present a reticulated tissue with only a moderate tendency to disintegration. In these lesions bacilli are rare, and inoculations, positive with guinea pigs, negative with rabbits, show that we have an attenuated form of tuberculosis. The ulcers of tuberculosis of the skin do not occur from bacilli conveyed in the blood, but from local inoculation of the bacillus tuberculosis. Their common seat about the orifices of the body through which pour the secretions containing bacilli from visceral lesions, their appearance also on the hands and fingers, which are also apt to be brought into contact with

diseased fluids, is easily explained by the hypothesis of local reinfection. Cachexia favors the growth of the tubercle bacilli. It is the consensus of opinion that local treatment is of small avail; iodoform dressings are probably best. The general treatment should be tonic and supporting, directed against the cachexia; beyond this little can be done.

In lepers it has been found that frequent examinations of the blood current by numerous observers fail to show the bacillus of leprosy. It is probable that when introduced into the circulation these organisms are rapidly carried to the capillary vessels and thence by diapedesis to the lymph spaces, where they set up the characteristic changes observed, *i.e.*, the formation of "lepromata." The lymph may contain lepra bacilli; the glandular secretions and excretions, notably the urine, on the other hand, are almost invariably quite free. But tears, nasal secretion and saliva swarm with bacilli in all cases where the ocular, nasal or bucco-pharyngeal surfaces are lepromatous, and the same is the case with the intestinal rectum. The uterine mucous and the vaginal secretions never contain the bacillus lepræ, of interest as regards the innocuity of sexual relations with leprous females. Yet in the frequent and often early involvement of the testicles in male lepers the sperm is known to contain bacilli.

The bacillus of leprosy may be detected in all portions of the integument, but particularly in the succulent tissues of the corium, the lymphatic network and spaces, the connective tissues of the dermic and subdermic capillaries and in the terminal nerve fibers; the upper layers of the skin are generally free from bacillus, and it is therefore unlikely that the disease can be conveyed by ordinary contact. The sudoriparous and sebaceous glands and the hair follicle are also free from vacillar invasion. The external mucous surfaces, those of the eye, nasal and bucco-pharyngeal passages, abound in bacilli, in most cases of tegumentary and of mixed leprosy; but the visceral mucous membranes, properly so called, excepting that of the rectum and large intestines, are free, as also are the uterine and vaginal mucous membranes. The capillaries of the affected parts are surrounded or chocked with embolic bacilli. They present all the alterations associated with peri- and endarteritis and with peri- and endophlebitis. It is in the lymphatics and ganglia that the constant foci of bacilli are found.

In leprosy the central nervous system remains free from bacilli, any changes which take place at this point secondary. In the nerve fibers beyond the plexus or in the terminal ramifications of the second order specific bacillary lesions are found. It is supposed, although our knowledge on this point is as yet vague, that the bacilli find their way along the nerves by means of the lymphatics accompanying their sheaths. Leprosy is undoubtedly a bacillar disease, due to specific bacillus which is never found without leprosy, and which in true leprosy can never be absent. The discovery and establishment of this fact we owe to the recent investigations of Hausen, Neisser, Cornil and Bates, Unna, Lutz, Arning, and Leloir. The theories formerly advanced to account for the origin of leprosy—malaria, a diet of decayed fish, excessive sexual intercourse, etc., are falling away in the light of the modern theory of bacillar infection, and are, like poverty, misery and filth, only favoring accessories, while the part played by syphilis is probably important in a double aspect, first in the cachexia produced by syphilis, favoring the occurrence of leprosy. There are two ways in which the organism of leprosy may be conveyed—either directly by contact or inoculation, or indirectly through the medium of the soil, the air, water, or some form of food. Arning alone has taken up the study of the indirect conveyance of the leprous contagion, and has examined in the Hawaiian Islands, where perhaps the most active focus of leprosy exists to-day, the various media likely to convey the bacillus, air, water, and foods, but invariably with negative results, the question of contagion in leprosy from a practical standpoint it must be remembered that there is a difference in the character of contagious diseases. If we class leprosy as a contagious affection it has no such power of contagion as we attach to variola, for instance, or even syphilis, where we can almost invariably trace the disease from one person to another, or, as in the latter case, can point to the primary lesion, the point of entry of the poison. Every immune individual exposed to smallpox or syphilis is in imminent danger of contracting the disease, but in leprosy, how different; for doctors, nurses, attendants, relatives and friends of lepers live in the localities where the disease is rife, in the leper asylums and hospitals for years and decades without contracting the disease. Take such a parasitic disease as ringworm, the spores of which are probably continually floating about in our atmosphere, particularly that of schools and asylums, without infecting any excepting certain susceptible persons, and chiefly the young. So it is not only the climate, soil, and hygienic surroundings, but also personal susceptibility enters very largely into the question of contagion in leprosy. In the Temperate Zones of America a case of leprosy has rarely been the cause of contagion except in Louisiana and Minnesota. The climate and our cleanly modes of life are very much against such an occurrence. Climate alone can not prevent the spread of the disease, but poverty and the herding together of the sick and well act as favoring influences.

The opponents of the contagiousness of leprosy present the following arguments: (1) Leprosy has never been successfully inoculated in animals. (2) Inoculations practised upon man have likewise proved unsuccessful. (3) Persons having frequently lived and even slept and cohabited together for years, one leprous, the other healthy, without the disease having been transmitted. (4) Physicians, nurses, etc., do not contract leprosy from those for whom they care. (5) Lepers who have come to large centers of population, as Paris, London, New York, and Philadelphia, have never transmitted their disease to others, nor started foci of disease. In reply to the first of these objections, the same arguments may be urged against syphilis, for in both diseases man offers a home to the virus which is refused by animals. As to the second point, that inoculations made on man have never proved successful, this proves nothing, for inoculability is, in fact, only one process of contagion. Such diseases as diphtheria, cholera, typhoid fever, scarlatina, do not appear to possess it. Here, too, it may again be said that the technique of bacteriology is not yet sufficiently well understood to enable us to assert anything positive on this subject. And it may be added that experiments upon man can only be undertaken under rare and exceptional circumstances.

The most scientific effort to inoculate leprosy in man, which was done on a condemned criminal in Hawaii, has failed. This is interesting and little known. Wth the criminal's permission, Arning inoculated him in September, 1884. Bacilli were found in numbers about the inoculated spot until March, 1885, after which they gradually diminished in number, but were still found in pieces of skin cut out from the inoculated part at the latest examination, fourteen months from the date of implanting. Since November, 1886, nothing has been heard, so far

as we know, of any development of leprosy in this case. Arning, who wounded himself at the autopsy of a leper, did not contract leprosy.

Prof. Gairdner, of Edinburgh, reported a case where leprosy was supposed to have been conveyed by vaccination, as follows: "Six or seven years ago a boy was brought to him suffering from leprosy, from which he subsequently died. This boy, who was born and had lived on an island within the tropics, a well-known seat of endemic leprosy, and had been vaccinated from the son of a physician there, the subject furnishing the vaccine matter, himself having been vaccinated from a child belonging to a leprous family. This last child is supposed to have had leprosy, but this fact is not known. What is known, however, is that the physician's child developed a mild form of leprosy, and was sent to England, where he lived in a large public school for a number of years. His stay there was authorized by no less authorities than Liveing and McCall Anderson. No evil results followed."

Prof. Gairdner regards this case as conclusive of the possibility of transmitting leprosy by vaccination, which is accepted by Bensier, and the facts do seem very strongly to favor such a view, although there are certain lacking points as follows: First, the person from whom the vaccine matter is taken is not known to have been or to have become leprous; again, the two children had been born and brought up nearly to adolescence in a region where leprosy is endemic and where they must have been exposed many times to leprous infection. In medicine we must consider all possibilities.

The Eye-Treatment of Epilepsy.—Dr. Ambrose L. Ranney (*N. E. Med. Monthly*, Nov., 1902), in closing an article on this subject, publishes the following deductions from "clinical facts that have been clearly established within the past fifteen years":

1. Among the predisposing factors in the causation of epilepsy, "eye-strain" is probably the most important.

2. A scientific and thorough investigation of both refraction and errors of adjustment of the eye-muscles should be made as soon as epilepsy develops by some competent observer and by modern instruments.

3. Drugs should never be administered to control epileptic seizures until every possible reflex-cause has been sought for and corrected.

4. The most serious refractive errors and muscular defects in the orbits do not necessarily create eye-symptoms, even when reflex-symptoms produced by existing eye-defects are extremely severe.

5. The percentage of cure of chronic epilepsy under skillful eye-treatment will naturally be modified greatly by the abnormal eye-conditions found, the physical condition of the patient, the amount of drugs that have been given to the patient, and the complications that may coëxist with eye-strain.

6. No one is ever justified in promising to an epileptic a complete cure of epilepsy by any method of treatment.

7. To colonize epileptics or to place sufferers of that type in private sanitariums without any investigation of their eyes and eye-muscles cannot be too strongly condemned.

8. The total percentage of epileptics who suffer from eye-strain as an important factor is very large, after first deducting from the total number the comparatively small number of cases that owe their epileptic seizures directly to some organic lesion of the brain or to a depression of the skull.

9. The duration of eye-treatment in epilepsy varies from three months to three years.

10. In epileptics, final refractive tests should invariably be made while the eyes are under the full influence of atropine. Such tests are positive.

11. One radical cure of epilepsy without drugs offsets a score of failures.

Experiments in Infection of Man with Malaria through the Bites of Mosquitoes.—Dr. V. V. Favre (*Roussky Vratch*, Oct. 19), repeated the experiments of infecting persons with malaria by means of the bites of infected mosquitoes, which have been performed in Italy, England, and Japan, and found that such an infection could be accomplished by means of the bite of an infected anopheles claviger. He caused himself to be bitten by a mosquito belonging to a brood that had been allowed to suck the blood of a patient who had numerous crescentic parasites in his circulation at the time. The salivary glands of these mosquitoes after a time became filled with sporozooids, and one of them bit the author. Twelve days later the first attack of malarial fever came on. The result of this experiment, in his opinion, shows conclusively that the theory of mosquito infection is to be accepted; that the bite of a single mosquito can produce an attack of malaria, that the true period of incubation of malaria is about twelve days, and that estivo-autumnal fevers run a course at first like that of the benign tertian form.

X-Rays in Malignant Growths.—According to A. R. Rainear (*Jour. Adv. Therap.*, Dec., 1902), among the advantages that the Roentgen ray has over all other plans of treatment in malignant growths, may be mentioned: (a) The X-rays have a specific action upon the malignant structures and those of a low vitality; (b) the X-ray exposures are painless; (c) they leave exceedingly small scars; (d) can be used in surgery where operation would cause a large uncovered area or a bad disfigurement; (e) the percentage of cures is greater than, or equal to, where surgical measures are employed; (f) there is no loss of blood to cause weakness and exhaustion; (g) the avoidance of an anesthetic, with its annoyances and dangers. The choice of the instrument for excitation of the tube is a static machine of medium size, having 12 to 15 plates, varying from 28 to 32 inches in diameter, the speed ranging from 300 to 500 revolutions. A hard tube is the best for deep-seated cases, and a medium or low tube better adapted for superficial diseases such as epithelioma, lupus and rodent ulcer.

—Fere (*Rev. de Méd.*) describes the case of a woman who noticed the complete suppression of the odors of the cutaneous secretions at the moment of fecundation. It occurred regularly in her five pregnancies, also in her mother's three and her sister's two. The family were always able to determine the date of fecundation from the cessation of the odors, and their reappearance announced the return of the menses. The only similar occurrence which Fere has found recorded is Morren's statement that the fragrant orchids, such as the Marillaria aromatica, lose their perfume in half an hour after artificial application of the pollen, while the non-fecundated flowers retain their perfume for a long time.

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"We do not take possession of our thoughts, but are possessed by them. They master us and force us into the arena, where like gladiators, we must fight for them."—*Heine.*

EXPERT MEDICAL TESTIMONY.

A LEARNED judge on being asked whether he thought there was as much perjury in the witness box as people believed was constantly occurring in courts of justice replied: "My opinion of witnesses is that a large proportion of them should be divided into three classes—liars, d—d liars and experts." This is on the same plane as the theologian who had divided the world into three classes—"saints, sinners and the Beecher family"—both placing the last mentioned in a class distinctly by themselves. Those who have noticed the testimony of experts in nearly all of the great criminal trials have observed how each side employed its own experts who in the majority of cases were biased almost as a matter of course in favor of the side by which they were employed, and expressed with apparently the same confidence and equal dogmatism, contrary opinions upon the same condition of things. Even if the experts are honest in expressing opposing views it hardly presents a dignified exhibition in the witness box and it is quite natural that the confusion produced in the minds of the jury is so great that no attention is paid to either side. There is no doubt that expert testimony might often be of the greatest value in bringing out the real facts of the case in such a clear light that they would be of the utmost importance in reaching logical conclusions. It is very evident, however, that the present manner of introducing expert testimony is radically wrong. There is a great deal of truth in the assertion of Lord Campbell that "hardly any weight is to be placed on the testimony of what are called scientific witnesses." Science has not yet reached such perfection especially as it pertains to medicine that it can be called infallible. Many a life has been sacrificed to the wrong conclusions based upon what was honestly believed to be scientific facts which further investigations have shown to be erroneous. Professor Lloyd in his novel "Stringtown on the Pike" gives a graphic illustration of a man condemned to death on expert testimony showing the presence of poison in the stomach by tests which were supposed to be infallible. Experiments at a later day showed that the same reaction which proved the presence of poison in the stomach could be produced by other causes, and in this case were produced by the decomposition of food and that no poison whatever was administered. Cases of ptomaine poisoning illustrate in a marked degree how easily mistakes can be made even by the most scientific and how the testimony in conditions where we have not yet reached the limit of chemical changes should be looked upon with the utmost caution. It is very evident that experts should be entirely unbiased, presenting facts solely from a scientific standpoint. To do this experts of known ability should be selected either by the court or appointed by the Governor. Before taking their place in the witness box they should be fully informed as to conditions upon which they will be called upon to testify. Testimony of this character would be of material help both to the judge and jury instead of leading to that confusion of mind which often causes its rejection.

SELF POISONING.

THE study of ptomain poisoning shows what a prolific cause of disease exists in the development of poisons in the human system and how often death is the result, frequently sudden and unaccounted for from the chemical changes which are constantly taking place in the body owing to a failure in the selection of proper food and the observation of correct hygienic rules. In view of the fact that food materials in the process of digestion are frequently changed into active poisons which produce painful and often fatal results as they locate in different parts of the system, the first step of the physician should be to keep in action the great organs of elimination through the channels by which the work can best be accomplished.

La Science Illustré in speaking of these poisonous alkaloids, ptomains, etc., says: "A false doctrine long in favor during the greater part of the last century, attributed to plants alone the power of producing the alkaloids, those nitrogenized poisons which often have fatal effects on the organism even in slight traces. Owing to this idea in each medico-legal analysis where a poison of this nature was in evidence, the expert invariably concluded that it had been criminally administered. How many innocent persons paid for this rash and incorrect inference with their lives we do not know.

"It has been demonstrated that in the course of the putrefaction of the tissues small quantities of alkaloids are formed. The chemical methods of extracting these substances are very complex, the toxic compounds being literally drowned in great quantities of water ammonia, skatol, indol, etc. The best way is to utilize their solubility in chloroform and the facility with which they form compounds that are soluble with difficulty in platinum chlorid. The cadaveric poisons or ptomains are basic

bodies having sometimes the odor of the putrefaction, sometimes the soft perfume of flowers; they are of the nature of venoms and produce on the organism an action as prompt and violent as the poison of the cobra.

"Their origin is entirely in the putrefaction of albuminoid bodies (albumin, white of egg, gelatin, etc.); putrefied cheese furnishes a similar example. These facts explain the numerous cases of poisoning with canned foods, cheese, etc.; the formation of these poisons is prevented by the use of antiseptics, which oppose the development of bacteria, the necessary agents of putrefaction.

Carrying these researches still further, M. Gauthier has studied the formation of ptomains in the excreta of the living animals. Every one knows the disordered state produced in the living being by the accumulation of matter that should be eliminated. In urine, in the muscles, etc., poisons were isolated, to which the name leucomains was given. Injected into the veins, these toxic agents have a special action on the nerve centers, producing sleepiness and fatigue—the symptoms observed at the end of a period of high living.

"A tired man is simply poisoned by his leucomains; when these have been eliminated the muscles become supple again. The custom observed by butchers, never to kill a tired animal, is a consequence of the same facts. The discovery of ptomains and leucomains has thrown new light on the working of the organism; whenever the organs are in pain and work badly, these poisons are forming, and by their localization in the tissues, give rise to fatigue, cramps and fever, sad companions of all disease."

TREATMENT BY HYPODERMIC INJECTION.

SOME twenty years ago an article was published in the MEDICAL TIMES from a leading homeopathic physician in Providence, R. I., on the successful treatment of local diseases by the hypodermic injection in the affected parts of small doses of the specific remedy. At the same time general treatment was kept up mostly hygienic in its character. The suggestion, though occasionally adopted, did not receive a very wide acceptance. The fact that the same idea has been suggested by Professor Bouchard in his recent address before the Egyptian Congress, published in the *London Lancet* of February 7, 1903, shows how in the history of medicine important facts are advanced and forgotten in the whirl of professional life until brought to life in after years. Professor Bouchard gives in his address several cases of localized disease where the specific remedy is introduced by injection into the diseased area with results vastly superior than where it is taken through the stomach. Among the cases mentioned are acute articular rheumatism speedily relieved by injections over the affected part of one-half grain of sodium salicylate and synovitis, entirely disappearing after the use of two or three grains dissolved in a drachm of water. Injection into painful thoracic muscle stopped an early pleurisy, and in rheumatic pericarditis an injection of one and one-half grains lower the fever from 102° to 100°. After a second injection, in three days, friction sounds had disappeared. In cases of ulcerated gumma, where the usual method of administering mercury had failed, one grain of the iodide injected near the gumma was sufficient to produce a cure. In neuritis and in inflammation of the joints or of internal organs, the injections have been made not into the affected cavities, nor in the tendons or nerves, but into the neighboring tissue as near as possible to them. In syphilis of an ulcerated character, where the iodide of potash and mercury produced gastric disturbance, relief is promptly obtained by injections without any unpleasant results. This comparatively new therapy is so easily adopted, and thus far so fruitful of beneficial results, that it will undoubtedly take a strong hold upon popular favor.

METROPOLITAN HOSPITAL.

A SUN PARLOR is about to be erected in connection with the Tuberculosis Pavilion of the Metropolitan Hospital, Blackwell's Island. The new building will be one-story high, have gable roof, and be enclosed in glass on all four sides. Inside it will be fitted up with reclining chairs, settees and sofas suitable for patients. At first, only men will be admitted to it, the proportion of male to female patients being 4 to 1. The building will contain all modern appointments, and when completed will cost about $10,000. It will be so arranged it can be enlarged as necessity and appropriations warrant. The establishment of separate pavilions in connection with the Metropolitan Hospital, where the tuberculous patients of the Department of Charities can be treated, has proved a great success. The Board of Health of this city are negotiating for a farm, either in the Adirondacks or the Catskills, where consumptive patients can be treated. At present, tents will be erected, and those who are able to work will be encouraged to do so as a part of the treatment. Life will be as much as possible in the open air, and the food specially adapted to the general condition of the patient. Admission will be confined not alone to charity cases, but to all who may desire to avail themselves of the advantages which the organization offers to the invalids. It is admitted that pure air and sunshine are the two most important factors in effecting the cure of tuberculosis. The tent life of the proposed farm is one of the most important means of securing these advantages. Those who have had no experience in this out-of-door life are apt to entertain an exaggerated idea of its dangers and inconveniences. Extended experience in tent life in Colorado, New Mexico, Arizona, and other Western States shows an increased appetite, improved nutrition, diminished cough, cessation of night sweats, improved sleep, increased weight, decreased fever, and diminished tendency to take cold.

The advantages of abundant sunshine and fresh air

are fully recognized in all our modern hospitals, and in severe forms of acute disease the patient is often removed from the wards to tents upon the lawn, with very marked benefit.

A STEP IN THE RIGHT DIRECTION.

THE medical profession always appreciates public co-operation against quackery and is grateful therefor, although it has not the immediate, financial interest in the matter that appears on superficial consideration. Indeed, it is the general impression of physicians that the existence of quacks is one of the principal items in the support of the regular medical profession. Of course, there are some quacks who are really very competent practitioners and who, after having used circulars and newspaper advertisements to secure a patient, treat him with some degree of skill and honesty of purpose. Such quacks are in direct competition with the regular profession. But for one such there are dozens who would not to themselves pretend that they have the slightest ability or even desire to practice medicine in the true sense of the word. Their sole object is to catch the patient and get all they can out of him, either by inducing him to buy certain kinds of medicine without a consultation or by a more or less close imitation of the personal observation and prescription of the regular physician. The medicine or method of treatment itself must, to a certain degree, fulfil two requisites—it must soothe the immediate symptoms and it must do no very conspicuous damage. Thus the financial service which the quack performs for the physician is based on one or both of two results—either the drug itself exercises an insidious but harmful influence, as, for example, by establishing the alcohol or opium habit, or it allows a comparatively mild and trivial indisposition to develop into a serious disease for which the physician's services must ultimately be called into action. Disease by delay increases by a high rate of compound interest. Thus in terms of financial import the "case" which originally would have been worth, say, five dollars to the regular profession of medicine, if invested in quackery, pays assessments to the latter of perhaps ten or fifteen dollars and ultimately reaches a value to the former of, on the average, fifty dollars. Most of the discoveries of quacks are literally golden in their ultimate yield to the medical profession.

We have thought it worth while to reiterate what our readers already know, that the constant warfare which they are waging against quackery is a warfare of philanthropy, and in common with most of the work along therapeutic or sanitary lines, directly against their own financial interests.

Very recently, we are informed, the Medical Society of the County of Erie (N. Y.) has through its board of censors made an attempt to stop the practice in Buffalo of a boy wonder, whose particular method is the laying on of hands. Unfortunately, the boy wonder was shrewd enough to have his case diagnosed, and, so to speak, introduced to him by a man holding a medical diploma so that, technically, the society found it impossible to secure a conviction. Their endeavors have, however, been seconded by one of the Buffalo papers, *The Review*, which has looked up the records of both the boy wonder and his partner and seems to have established not only the general unsavory character of the former, but the rather doubtful legal status of the latter. *The Review* has devoted considerable space and much diligent research to this worthy cause and has printed testimonials of results achieved, which are diametrically opposite to those usually published by advertising quacks.

We may state incidentally that we use the term quack in no opprobrious sense, but according to the recent custom of the medical profession to relieve this term of any reference to legal status or educational qualification and to use it to designate any physician who advertises in an unethical way.

Unfortunately, *The Review* is either somewhat inconsistent or is more discriminating than the medical profession, for on the same leaf as one of its denunciations of the boy wonder appear illustrated testimonials of a "lung cure" and of a "lost manhood" specialist. Of course, all such advertisements look alike to the non-advertising physician, and it may be said that the laity is equally susceptible to all proclamations of miraculous skill, in whatever line. Nevertheless, we are grateful to *The Review* for its editorial condemnation of one evil, and from the practical standpoint its very inconsistency adds to the value of the lesson which it is teaching the laity, for the latter may learn that the appearance of an advertisement betokens no guarantee on the part of the press of the truth of the advertisement, but is merely the consummation of an arrangement with the business office, which is usually quite separate from the editorial management. Yet *The Review* cannot overlook the fact that its courageous dealing with the boy wonder tends to lessen the value of its columns to other advertising physicians and we trust that instead of altering its editorial policy from purely business reasons, it will adhere to its noble work and carry it to the manly and logical point of excluding, absolutely, all medical advertisements, as has already been done by some few of its contemporaries, notably in Philadelphia.

DR. William Huntington Leonard, one of the most eminent physicians of the Northwest, recently received a most graceful and well-deserved tribute from his medical brethren of all schools in a dinner in Minneapolis, the city of his residence and the presentation of a loving cup on the fiftieth anniversary of his entrance into the profession. Dr. Leonard has been more prominently connected with the medical institutions of his State than any other man, and his energy and sound judgment is warmly appreciated by the entire community.

THE DEVELOPMENT OF THE MEDICAL SCHOOL.

FIFTY years ago this country suffered from a dearth of medical schools and an urgent need existed for institutions convenient of access at which formal didactic instruction could be obtained. At this time there was a very considerable need of physicians, not only because of their relative and absolute scarcity, but because the country was comparatively thinly populated and the traumatic, infectious and obstetric liabilities of the community were greater than at present.

The demand for colleges was met largely by the enterprise of young men who organized classes of medical instruction and applied for State charters, often of most ambitious scope. In course of time it came to be pretty generally recognized that a medical college was a profitable enterprise. It cost comparatively little to provide a meeting place for students and lecturing was pleasant and involved only incidental expenses. Aside from the trouble and expense of obtaining material for dissection, the early days presented none of the present practical problems in regard to laboratory work and medical teaching was at least as lucrative as practice. We mean no disparagement of the organizers of our medical schools. They fulfilled the needs of the times and with as great thoroughness as conditions warranted.

In the course of a few years it became apparent that connection with a medical school was profitable, not only directly, but even more so as a result of the prestige which the teachers enjoyed both among their former students and among the laity. With the full realization of this fact began the period of prostitution of medical education. Schools were organized without reference to the needs of the country and even in spite of genuine economic reasons to the contrary. Colleges were multiplied beyond reason, and in very many instances the professors were simply whatever the community called grafters before that inelegant word came into use. For the sake of obtaining a sufficient number of students the most shameless disregard for mental and moral qualifications was practiced, and any one not positively illiterate or notoriously criminal could feel sure of becoming a doctor of medicine after attending two short lecture courses at a school of medicine in nominal good standing. It is to the credit of American physicians and the community at large that almost purely voluntary selection has kept the older members of the medical profession at a high standard of personal excellence and practical ability. At first thought it is difficult to explain what has become of the utterly unfit timber out of which the medical schools of twenty years ago essayed to make physicians. In many instances physicians who were "self-made men" in the worst sense have by diligent post-graduate study converted themselves into self-made men of the highest culture and largest practical value. Many others have gradually been shaken into positions of obscurity where their real number is lost sight of. Others have been forced out of actual practice by the discrimination of the laity. Perhaps not a few have voluntarily resigned a life for which they have recognized their unfitness. Some years ago there appeared in the columns of a contemporary a most pathetic letter from such a graduate. In spite of its bad spelling and worse grammar, it showed that its writer was a true gentleman at heart. He had been lured from a useful life as a street car driver by the announcement of a reputable medical school, had attended two courses of lectures and received his diploma, which was at that time a license to practice. Then had come the awakening. He recognized that his teachers had not been his true friends, but that he had been pushed into an already overcrowded profession without the native ability or preliminary education to contend with adverse circumstances and to shoulder his way into an honorable position. As he stated, with, perhaps, too great frankness, his professors depended upon his very ignorance and lack of opportunity to acquire practical experience, for their bread and butter—the more such men as himself that were turned out of college the more consultations they would have. In conclusion, he announced his intention to go into some line of work for which he was fitted.

The crucial test of bad faith in the establishment of medical schools was the organization of a private corporation, which not only subscribed to stock for the endowment of a plant, but which actually met by assessment a continued loss in running expenses for the sake of the business value of a professorship. Such institutions had an evil influence far greater than is immediately apparent. They necessarily broke up professional *esprit de corps* into the clannishness of selfish cliques; they set the worst possible example before the young physician; they overcrowded the medical profession to such a degree that it became almost impossible for one depending on practice for a livelihood to live by honorable means or, at least, without the assistance of some influential clique. This state of affairs gradually brought about its own cure. First the profession and then the laity awakened to the evil and the prestige of college association began to be questioned. Meantime, the scramble for practice and for clinical material had brought about various hospital and dispensary abuse which called for correction quite as loudly as the original evil.

The urgent indications may be summarized as follows: to diminish the number of medical graduates to meet the demands of practice; to increase the general and the technical training of these graduates, both in the interests of their prospective clienteles and the good name of the profession and for the sake of reducing their numbers from a purely economic necessity; to prevent indiscriminate pauperizing of patients in attempting to secure clinical material; to restore a general, ethical tone to part of the profession who had been blinded by self-interest to their duty to the profession at large; to restore the good name of medical education, which in some quarters had become almost synonymous with dirty political methods and an unprofessional spirit.

To some extent, especially in regard to instituting proper standards of education and regulating dispensary abuses, legislation had to be invoked. In the long struggle to influence legislators the profession learned the salutary lesson that it must act as a unit, that it must surrender certain prejudices in the interest of genuine principles and that it must distinguish between what it needs and what it merely wants. In securing such legislation the profession owes the greatest debt of gratitude to a factor too often forgotten, namely, the medical schools of the better class. We cannot dwell too strongly upon this point, for there has been altogether too much confusion of good schools with bad, and it must not be forgotten that the same kind of men who under favorable circumstances have conducted medical schools for revenue only have under less favorable conditions vented their spleen by an indiscriminate tirade against the general cause of medical education.

Within the experience in practice of physicians who are by no means veterans there has been so rapid and extensive a change in the requirements for a license to practice, that in all of the more advanced States the colleges have been forced to raise their requirements for matriculation and graduation, either as a direct result of mandatory legislation or because the results before impartial State boards would react unfavorably upon any college that lagged too far behind the spirit of the law. Here, however, we find evidence of the far-reaching effect of the reform, for the conduct of a four-year course, of a seven to nine months' session, providing clinical experience and laboratory facilities of various kinds, is far different from running a two years' lecture course and a dissecting-room. Fewer students matriculate; they are more critical and demand not only general medical ability on the part of their teachers, but that these teachers shall have some knowledge and skill in pedagogy as well as in medicine and that they shall make a business of teaching. Instead of a force of seven men, at least twenty or thirty teachers are necessary and their compensation, with the increased expense of laboratories, mounts up much more rapidly than any possible increase of students' fees.

We are just at the beginning of the period of evolution of our medical schools, brought about by the increased requirements. State and long established endowed institutions are merely spurred to a little greater effort than they might spontaneously show, but the essentially business organizations, even when characterized by reasonable requirements and good faith in the past, are subjected to a considerable strain to continue their existence. Recently a very excellent institution of this class has closed its doors, simply because the struggle for existence was not worth the effort. In other cases, two or more schools have joined forces and are content to continue with about as many students as either one formerly enrolled. In these instances the plethoric faculties numbering from a quarter to a half of the undergraduate attendance serve to call attention to the original reasons for establishing private medical schools, and this object lesson, as presented in catalogues and at commencement exercises, cannot fail both to instruct and to amuse the medical profession outside of the colleges and the laity.

Meantime, medical societies and periodicals, national, State and municipal laboratories and executive boards afford so large an opportunity for extra-collegiate physicians to present their work to their fellows and even to the laity that the prestige of a teaching position no longer looms up as a possible danger to the profession at large. This by no means indicates that the medical teacher is losing his dignity or distinction. On the contrary, he is gaining in the esteem of all, but he is compelled to make teaching his real work, instead of a side line, for advertising purposes. Even in the so-called practical branches it is becoming recognized that a man may be a very good teacher and still not be especially adapted or inclined to private practice while, conversely, one who is admirably qualified for actual practice and scientific research may not make a good teacher or may not easily adapt his habits to the routine of a school. So far as the more purely scientific branches of medicine are concerned, it is no longer expected in the better class of colleges that thorough attention to class work will leave time or energy for practice.

We do not mean to imply that this process of evolution has been passed through by all institutions or in all parts of the country, nor that medical education has emerged from a state of universal iniquity into one of symmetric perfection. The present favorable tendencies are by no means uniformly fulfilled and, on the other hand, they were anticipated by not a few institutions many years ago, with the exception of the length of undergraduate study required. Many of the problems alluded to and others not even mentioned remain unsolved, but the evolution, so far as it has progressed, has generally been in the right direction and the evils and shams that formerly stood boldly before the profession have been compelled to seek shelter, or, at least, to assume a thicker mantle of virtue.

THE New York *Times* publishes an account from a correspondent of the "etherization" of plants naturally flowering in the spring by means of which they produce blossoms during the previous autumn. The plants are stored in a small galvanized tank. Then ether is poured into a small cup fixed to the top of the tank, whence after the tank has been securely fastened, the ether is allowed to evaporate for 48 hours. During this time the plants shed their leaves and may be described as being in a state of intoxication. After this period the plants are exposed to the air for another period of 48 hours. This in turn is followed by a second period of etherization, after which the plants are removed to an ordinary forcing house and within two or three weeks begin to flower freely.

DR LORENZ'S FEE.

CURRENT reports concerning the amount of Dr. Lorenz's fee (variously stated at from $40,000 to $175,000) for coming to this country and operating on Mr. Armour's little daughter, have occasioned a good deal of comment, some of it of a more or less censorious character. A writer in the Boston *Transcript*, as quoted in *Charities*, remarks that "the man who delights to moralize about the injustice of the present social order will find in this transaction a good text for a preachment. The accident of wealth, he will point out, makes it possible for the millionaire to expend a fortune for the cure of his crippled child, while the accident of poverty prevents the proletarian from securing for his offspring medical attention of even the most ordinary kind. He will observe, further, that it is outrageous to withdraw a great surgeon from his important general practice that he may devote himself to a single case, perhaps relatively unimportant. This criticism, however, overlooks the incidental good that must result from the visit of the Austrian physician to this country. Mr. Armour pays the bills, but he does not monopolize the benefits. After having operated successfully on the Armour child, Dr. Lorenz performed similar operations on numerous other children suffering from the same congenital affliction. . . . The coming of the Austrian expert will contribute to the progress of surgery throughout the United States. In bringing Dr. Lorenz to this country, Mr. Armour has performed indirectly a public service of incalculable value. Such reflections as these considerably moderate the force of the pessimist's contention regarding the gross injustice of present social conditions."

The above conclusion is still further strengthened by an item of news we have just met with, namely, that Mr. Armour has announced his intention to erect and endow an institution or school of "bloodless surgery" in commemoration of the work of Dr. Lorenz on his daughter, and has invited Dr. Mueller, Dr. Lorenz's assistant, who has traveled with him during his tour in this country, to become the head of this institution, which, it is stated, is to have a settled income of $100,000 annually. It is to be devoted wholly to "bloodless surgery," and the income will be sufficient to obviate the necessity of making any charge for the operations. It is also stated that Dr. Mueller has been appointed to a special chair in the University of Chicago, perhaps to be well endowed, and in either case the public will be the gainer.

It seems impossible that a multi-millionaire's gratitude could manifest itself to greater or more unalloyed advantage than in the establishment of this particular charity. Exception might be, and, we believe, has been taken to the multiplication of endowed free libraries, and even of free general hospitals, on the ground that they tend to lower the spirit of self-reliance in the great mass of their beneficiaries. No such objection, it is obvious, can be urged against the magnificent scheme which rumor, in this instance, attributes to the wealthy Chicagoan. May it be carried out and prosper; and let the completed edifice take its name from the primary source of the benefaction—not Armour, but Lorenz!

INFECTIOUS COLDS.

ACCORDING to the *Hospital*, many experiments have been undertaken to satisfy the medical mind that a thing that most people outside our profession have always taken for granted—namely, "colds"—are catching. That they are catching no one now doubts. It is recognized by those who have the management of sanatoria for consumptives that one of the great disadvantages attending the visits of friends is that "colds" are introduced, much to the detriment of the patients. Of course, every lady knows that "sniffly" people are as well avoided when social functions are on hand, and now a serious question is being asked—namely, should a doctor visit his patient when suffering from "cold"? In the ordinary daily life of those who go out into the world and take their chance of all infections, who ride in trains and omnibuses, and even go to church, the opportunities of infection are so many that it is probable that one more is of no moment. But to the chronic invalid, shut off rigorously from external influences, the visit of a catarrhal person may undoubtedly be productive of injurious results. If ever this view should be seriously taken by the public—and they are kittle cattle to shoe, that same public—no one knows what fancy they will take up next. The matter might become a very anxious one, not only for medical men, but for those sick insurance societies which profess to give so much a week to medical men while incapacitated by illness. What is meant by incapacity?

VITAL FORCE THE RESULT OF ELECTRIC FORCES.

ABOUT a year ago Professor Jaynes Loeb startled the scientific world by his statement that the vital force of life comes from the electric forces and the food which is eaten and not from heat. Prof. David J. Single also of the University of Chicago makes in a recent lecture an equally startling announcement. He states that it is not only a sodium chloride which stimulates and causes heat action, but that oxygen gas is often a more important factor in sustaining heat action. While experimenting with a strip of turtle's heart which he was moving from a vessel containing sodium chloride he noticed that the beating of the strip was greatly increased when it came into contact with the air. Noting this he experimented with a piece of the ventricle of a turtle's heart. When it ceased to beat he put it in a solution of salt and then put the strip into a jar of oxygen gas. Here the beating was sustained for 72 hours.

—Better is the surgeon who saves a finger than he who amputates a leg.

BIBLIOGRAPHICAL.

MANUAL OF BACTERIOLOGY. By Robert Muir, M.A., M.D., F.R.C.P. Ed. Professor of Pathology, University of Glasgow, and James Ritchie, M.A., M.D., B.Sc.; Reader in Pathology, University of Oxford. American Edition (with additions) revised and Edited from the Third English Edition by Norman Mac Leod Harris, M.B. (Tor.), Associate in Bacteriology, The Johns Hopkins University, Baltimore. With one hundred and seventy illustrations. Pp. 565. Octavo. The Macmillan Company, New York, 1903.

In presenting an American edition of this well-known and acceptable work, the Editor has endeavored to add to its value by giving adequate expression to the best in American laboratory methods and research, and at the same time to augment its general scope, without eliminating the personal element of the authors. Therefore occasional alterations and additions have been made in the text at many points, for the purpose of adapting the work to American uses. The work as a whole is one of the best with which we are familiar, and it can be depended upon as a handbook by the student and the general practitioner. The physical part of the book is also excellent.

THE PHYSICIANS' PROTECTIVE VISITING LIST. A daily record of Practice and Accounts without the use of signs, which is the only strictly legal pocket visiting list and financial record on the market. Should be used in connection with our Ledger of monthly balances, with which it constitutes "The Physicians' Protective Accountant." The Clinic Publishing Co., Chicago.

This system combines a wonderfully concise, practical and accurate method of bookkeeping, and is worthy of attention, too, on account of its time-saving quality. The price is only $2 for the set.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY FOR 1903. A yearly Digest of Scientific Progress and Authoritative Opinions in all branches of Medicine and Surgery, drawn from journals, monographs, and text-books of the leading American and foreign authors and investigators. Arranged, with critical editorial comments, by eminent American specialists, under the editorial charge of George M. Gould, A.M., M.D. In two volumes—Volume I, including General Medicine, octavo, 700 pages, fully illustrated; Volume II, General Surgery, octavo, 670 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Co., 1903. Per volume: Cloth, $3.00 net; half morocco, $3.75 net.

We do not know of any similar publication, either American or foreign, that can excel in any way this useful year-book, published by W. B. Saunders & Company. It is not an indiscriminate collection of extracts clipped from any and every journal: the matter is carefully selected, edited, and in numerous cases commented upon by the eminent authorities whom Dr. Gould has enlisted in his service. Every new theory and scientific discovery worthy of the consideration of the profession has found a place in this unusually complete year-book; and the names of the several editors are sufficient guarantee of a proper discrimination. The work comes to us in the same dress as last year—in two volumes. Volume I contains General Medicine, and Volume II General Surgery, the volumes being sold separately if desired. As usual the illustrative feature is well taken care of, there being eleven full-page inserts, besides many excellent text-cuts. We strongly recommend this year-book as one of the best of its kind to be had.

STATE COMMISSION IN LUNACY, THIRTEENTH ANNUAL REPORT. Pp. 1470. Albany, N. Y. J. B. Lyon Company, State Printers.

A valuable book for reference.

UROPOIETIC DISEASES. By Bukk G. Carleton, M.D. Author of Genito-Urinary and Venereal Diseases, Disorders of the Sexual Organs of Men, etc. Third edition, illustrated with 33 photomicrographs and 7 lucotype figures. Pp. 422. Price, $3.50. New York: Boericke & Runyon, 1902.

The author has taken the opportunitv afforded by the demand for a new edition, to revise his work to date, and to improve the index in the interest of the busy practitioner who desires a reference book in this specialty.

HARRINGTON'S HYGIENE. A Manual of Practical Hygiene for Students, Physicians and Health Officers. By Charles Harrington, M.D., Assistant Professor of Hygiene in the Medical School of Harvard University. New (2d) edition, revised and enlarged. In one octavo volume of 755 pages, illustrated with 113 engravings and 12 full-page plates in colors and monochrome. Cloth, $4.25, net. Lea Brothers & Co., Publishers, Philadelphia and New York.

It is an admitted fact that within the field of preventive medicine lies the greatest possibilities for future success in the reduction of disease. The advances made within the past few years, not only in the treatment, but in the prevention of disease, may be attributed to a great extent to a more full understanding of the laws of hygiene. The first edition of Dr. Harrington's Practical Hygiene, published a little more than a year ago, has contributed largely to this result. All the recent developments in the field of hygiene have been incorporated in the present edition. A chapter on the relation of insects to human diseases has been added. Many of the other chapters have been entirely rewritten to present the latest knowledge, and throughout the book will be found evidence of the searching revision to which it has been subjected. The work is so comprehensive, and at the same time so admirably simple that it serves equally the needs of student, physician, health officer and scientific sanitarian.

PROGRESSIVE MEDICINE. A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc., etc., assisted by H. R. M. Landis, M.D. Vol. I. March, 1903. 450 pages, octavo. Lea Brothers & Co., New York and Philadelphia.

This volume contains important articles worthy of consideration on the surgery of the head, neck and chest; infectious diseases, including acute rheumatism, croupous pneumonia and influenza; diseases of children; pathology; laryngology, rhinology and otology. The subjects are well treated and up to date.

LEA'S SERIES OF MEDICAL EPITOMES. MANTON'S OBSTETRICS. A Manual of Obstetrics for Students and Practitioners. By W. P. Manton, M.D., Adjunct-Professor of Obstetrics and Professor of Clinical Gynecology, Detroit College of Medicine. In one 12mo volume of 265 pages, with 82 illustrations. Cloth, $1.00. Lea Brothers & Co, Publishers, Philadelphia and New York, 1903.

This, the fourth volume of the series presents a clear epitome of the essentials of modern obstetrics. The book is admirably written and will prove an excellent work of reference not only to the student but to the general practitioner.

OBSTETRICS. Text-book for the Use of Students and General Practitioner. By G. Whitridge Williams, M.D., Professor of Obstetrics, Johns Hopkins University; Obstetrician-in-Chief to the Johns Hopkins Hospital. With eight colored plates and 630 illustrations in the text. D. Appleton & Co., 1903.

The author who is recognized as one of the ablest teachers and obstetricians in this country has been very successful in setting forth the scientific basis for and the practical application of the obstetrical art. While especial attention has been devoted to the normal and pathological anatomy of the generative tract, the more practical aspect of obstetrics by the bed-side has been presented with such clearness and minuteness in text and illustration as to meet every emergency almost equal to a course of clinical instruction in the maternity. The illustrations of great beauty and correctness have been photographed from life, and include microscopical sections, diagrams illustrating labor and its mechanism and the various operations which may be required. The typography is in the highest order of book making.

DISEASES OF THE SKIN. Their description, diagnosis, and treatment, with special reference to the skin eruptions of children, and an analysis of 15,000 cases of skin diseases. By H. Radcliffe-Crocker, M.D., Lond., F.R.C.P., physician for Diseases of the Skin in University College Hospital, Honorary Member of the Dermatological Society in America. Third Edition. Revised, re-written, and enlarged, with 4 plates, 2 of which contain 12 colored figures, and 112 other illustrations. Octavo 1,400 pages, cloth $5.00. Philadelphia, T. Blakiston's Son & Co., 1903.

Dr. Crocker's work in its previous editions has received the encomiums of the profession as one of the best in the English language. The etiology, symptomatology, pathology, and minute anatomy, constitutional conditions, diagnosis and treatment of each disease mentioned is fully entered upon, the therapeutics, dietetics and general regimen receiving careful attention. The newer remedies and bacteriological researches in their bearing upon dermatology are carefully noted. The book has been thoroughly revised and brought up to date.

—A mysterious philanthropist (the *Medical Visitor* says) has given to the poor of the New York East Side money enough to purchase a site and erect the buildings for a maternity hospital, besides making an endowment sufficient to maintain it independently. Who the donor is could not be learned. The institution is to be called the Manhattan Maternity Hospital and Dispensary. The buildings will occupy an entire block and will include, besides a hospital, a training school for nurses.

CORRESPONDENCE.

A FASHIONABLE NEW HEALTH RESORT

To the Editors of the MEDICAL TIMES:

Amongst the hundreds of thermal waters and spas of Europe how many are known even by name to the busy everyday physician, or the general public? I believe comparatively few. It is quite the fact that the great army of skilful up-to-date physicians are familiar with the value, and know the composition of such waters as those of Carlsbad, Baden-Baden, Kissingen, Marienbad, Vichy, Aix-le Bains, Wiesbaden, Homburg, and a score or more of others I could name, and about which medical men are well able to advise as to the selection of one of these spas as being best adapted to the malady for which the waters may be sought, but when one of the less well known spas are mentioned, it is not a very unusual thing for the physician to say frankly that he knows little or nothing of the place or its merits. Indeed, unless one has been in Europe, and spent years in visiting and studying its hundreds of thermal and cold springs, it would be quite impossible for him to know much about them all, because, while books on Carlsbad, Vichy, or other well-known places are numerous and generally well written, giving in a concise form all the more important and fundamental facts, as to their composition, action, and mode of employment, both when used for drinking and bathing, so that a general consensus of opinion is arrived at, and a uniform practice is followed, yet, with many of the lesser known waters it is quite another thing. Some of them of doubtful efficacy are unduly puffed up by interested people, while others remain almost wholly unknown and consequently neglected. Thus, springs of greatest therapeutic value may be passed over, and remain undeveloped and unappreciated by the great medical corps for centuries, only to be brought into notice by some accidental circumstance, or by the genius of some celebrated physician. Of the latter class, perhaps, the best instance is that of the waters of Salsomaggiore.

Situated in the Province of Parma, at an altitude of 400 feet above the sea level, and two hours distant from Milan—these springs were known to the Romans two hundred years before the birth of Christ, and employed commercially in a primitive manner, for the sake of the chloride of sodium which they contain in such great abundance, but the therapeutic value of these waters was only discovered in 1839 by an Italian physician of repute, practicing in the neighboring University Town of Parma.

Artesian wells from 1,300 to 2,300 feet deep were then sunk, three bathing establishments were speedily erected, and the place began to be filled with the halt, the maimed, and sufferers from throat and bronchial affections, still, for over 50 years the place remained in about the same state, filled during the season (Summer) with Italians of all classes.

These most valuable springs remained practically unknown to the medical and scientific world outside Northern Italy. The reason for this may have been that the means of access to this place was not easy, and there was no really up-to-date hotel with every modern comfort and convenience, such as English and Americans expect to find in places where they go, and where indeed they will not go unless such comfort and convenience is to be found. Then Mr. Ritz and his partner, Mr. Flyffer, came and built their most excellent hotel (Grand Hotel des Themes) at Salsomaggiore, and now the springs are becoming known in every part of the

habitable world. There is also an excellent service of express trains which stop at the junction "Borgo San Domino," from whence Salsomaggiore is reached in about twenty minutes by steam tramway, so that from being an obscure, unappreciated place, it is developing with rapid strides into one of the most fashionable and aristocratic health resorts in Europe.

From April to November is the best season, though the baths and inhalations may be taken all the year round. During the season Salsomaggiore is seldom without the honor of "Royal Visitors" and Continental personages, while the English nobility as well as many notable Americans will be found there seeking health and rest, and renewed vigor in its powerful tonic and healing waters.

Now, let us come to the important point of the composition, mode of employment, and action of these thermal springs! Coming up from a depth of nearly half a mile, from the very bowels of the earth, I may at once state that they are probably the most powerful thermal waters in the world. The richest in iodine, bromine, and lithium. Every physician and every person of a scientific mind will at once see that in the springs of Salsomaggiore we have then a magnificent remedy for some of the most inveterate and almost hopeless forms of human disease. I do not think it is worth while to burden the mind of the reader with the analysis of the waters made by various scientists. Sufficient it is to say that the principal components are sodium, potassium, magnesium, bromine, iodine, lithium, strontium, and silica, and I would lay particular stress on the presence of the silicate which amounts to 00.23 in every kilogramme of the waters, for its presence in any quantity occurs only in those waters which have given proof of their healing powers.

I dwell on this point particularly since I believe the real value of silicates as a therapeutic agent in mineral springs has not yet been fully studied or appreciated, and some of the marvellous cures during the last two or three years at Salsomaggiore have been, I think, partly attributed to the presence of this substance in solution in the waters. Springs containing iodine and bromine are by no means uncommon in Europe. I would mention at least thirty or forty straight off, but not one of them are anything like so rich in these substances as the waters which we are studying while the amount of lithium is very considerable. The amount of chloride of sodium is enormous in the Salsomaggiore waters, indeed so strong are they that for centuries they furnished an important quantity of salt to the Government (salt in Italy being a Government monopoly) and the other chemical salts and substances I have mentioned are also abundantly present in these highly mineralized waters. It will at once be seen that as I have already said they are the richest thermal springs up to the present discovered. These waters are used either in baths or for inhalations. The baths are given at a temperature of from 35°c. to 37°c., and of a density of 3° to 9° Baumé, and from fifteen minutes to one hour is the duration of a bath. The mother water is employed very rarely, being far too strong for use except in special cases.

The mother water is the water from the spring deprived of the greater part of the chloride of sodium by evaporation, leaving behind the other elements in a concentrated form. The water which has not been so treated is called salso-iodic water, and is the most commonly employed, though sometimes this water mixed with the mother water is used also. The baths are given under the direction of the physicians attached to the bathing establishments (of which there are three) and also in the "Grand Hotel des Thermes" there are also baths on each floor in the hotel itself, where the mineral baths can be given, the springs having been called on to supply the waters to the baths in the hotel, thus adding greatly to the comfort and convenience of those who go for a cure to Salsomaggiore. I do not know a happier combination anywhere than that of a Ritz Hotel, with the most powerfully curative waters in Europe. There are also at Salsomaggiore physicians of every nation, who can be consulted.

It is necessary to have a doctor's prescription before the baths or inhalations can be given, whether taken in the Hotel des Thermes or in other bathing establishments, and many well known spas would do well to copy this plan, for waters are often taken at many health resorts without any medical advice or supervision, and the greatest injury is sometimes done to the constitution of the individual in consequence, (of which I could give instances), but this is not the case at this famous Italian bathing place. When the bath has been used the waters are run out and the bath completely cleansed and disinfected with creoline, etc., before fresh water is let in, so that every bath is perfect in its purity.

Inhalations are taken in the establishment, and not in the hotel, and either salso-iodic, or diluted mother water is used. There are two methods employed Siegles and Pireys, also Janningens and Beiselenes, each has its own special value, and the choice as to which is the best for the patient to follow is left to the doctor consulted, who also fixes the time during which each inhalation should last, usually they are taken during 10 to 20 minutes, and may be repeated once or twice in the day. The water can also be employed in various other therapeutic ways, as mud-baths and douches both are nasal, and other forms, but they are not the most important uses of these springs. The baths and inhalations being the two chief forms in which the waters are employed with the most astounding results.

The next question and a most important one, which is necessarily raised is this, in what way do these waters exert their curative powers on the patient. Everybody in the profession is aware that the question as to the action of waters employed as baths is a vexed one. Some men worthy of our highest respect, asserting that waters employed only in baths can have no action at all on the functions of the body, since they are not absorbed by the skin, others to whom the profession looks equally with confidence are influenced much more by practical results which they from time to time see before their eyes than by mere theories, and they claim that in some way or another it must be conceded that mineral waters employed in baths do exert a most beneficial effect on the patient, though they cannot explain its "modus operandi" perfectly. I think there is an explanation to be found which will clear up misunderstanding on these points.

It must be known to every cultured physician that the waters of Bad Nauheim, Kreuznach, and other places where the waters are employed for bathing purposes, undoubtedly good results have followed the use of these baths, and it is not only where there is carbonic gas dissolved in the water, and which is supposed to have such a marked effect, and plays the chief rôle in the balneary treatment of disease, but it is due also to the action of the mineral substances themselves dissolved in the waters employed, and which probably, by acting as a stimulant to the circulation in the skin, as well as by

minute absorption of its more active elements, where the skin has been for some time in contact with it, and in the reflex action of the nervous system, that the explanation of the curative effects of the baths must be sought. Anyone who has taken a bath in these waters of Salsomaggiore will have a very lively remembrance of the slightly pricking sensation he felt all over the surface of the body, with an agreeable feeling of "bien etre" which he has not felt in any alkaline or simple bath, and which is sufficient proof of an action special to these waters. Then again the use of these waters as inhalations is even more important, absorbed as it evidently must be by the mucous membrane and carried into the general circulation, thus exerting at once a topical influence on local pathological conditions, as well as constitutional effects by its absorption into the system, and he would be a very courageous man or a very foolish one who attempted to deny that the immense success of this "cure" already obtained in the treatment of disease, was due to these facts, since the evidence is overwhelming and conclusive.

Lastly, we ought to consider what class of cases ought to go to Salsomaggiore in preference to anywhere else. From the composition of the waters it will at once occur to the practical physician that these waters must be invaluable in the treatment of every form of rheumatism and gout. Arthritis is but the chronic form of gout, and experience has shown that the thermal springs of Salsomaggiore are most rapidly efficacious in this terrible complaint. Sometimes massage is employed in conjunction with the baths, and results are more speedily obtained in some cases than when massage, or the baths alone have been employed.

So striking are the cures effected here that it is quite a common thing to see patients brought to the place in special railway carriages or ambulance beds, and other specially arranged means of transport, and after a few baths you will see those very people walking about, first with the help of a stick or a crutch and afterwards without any help whatever.

It must be seen to be believed, for it is incredible to anybody who has not seen or employed these baths, how wonderful they act in most inveterate cases. Swollen and stiff joints become small and supple. Digestion improves and the body functions are stimulated.

A special diet is usually prescribed, but it is not either a distasteful or insufficient one, such as is too often the case at other spas.

Salsomaggiore then in the first place, is pre-eminently the station for sufferers from every form of rheumatism and gout, whatever its form or duration.

The next great class of ailments for which we should recommend Salsomaggiore as of the first importance, are those troubles affecting women. Every form of sub-acute or chronic pelvic congestion, inflammation, neuralgia (ligamentary atony, which often is the cause of uterine displacements), as well as some forms of dysmenorrhea, since they are rapidly relieved by these baths. The duration of the bath in such cases is a very important point, and must each day be decided by the consulting doctor. Then there is another class of affections quite different from these, in which I have seen marked and permanent benefit, that is, nervous affections of the heart.

When a heart is diseased, its valves incompetent, its normal structure changed, and its functions consequently very seriously impaired, there is very little to be done for it beyond palliative treatment, hygienic, and the use of suitable drugs; baths, etc., are of very little use in such cases, indeed they are often most dangerous; but there is a very large class of the affections of the heart where there is no actual lesion, but a state which might lead to actual organic mischief if left to itself.

Such cases originate in the nervous apparatus of the heart. There are many symptoms of this condition, of which palpitation is one of the most marked. Other patients feel as if the heart has stopped beating, while feeling of faintness and digestive disturbance are associated with the irritability of this organ. The hurry of life and the high pressure at which men and women live to-day falls on the nervous system, and the nervous apparatus of the heart is the first to suffer. Here are the very mineral springs to calm and strengthen the intrinsic and extrinsic cardiac ganglia and remedy a state which otherwise would probably end in a permanently damaged heart. I should send such patients to Salsomaggiore with the greatest confidence, and they would leave it better and stronger by far than they went. Other conditions are no doubt greatly benefited also, by a course of these baths, particularly anemic troubles, neurasthenia, such cases should take at least one course of the baths during 21 days.

Now, as to the value and use of inhalations of these salso-iodic waters. I have already mentioned the two systems employed.

The diseases for which they are employed with abundant success, are:

Pharyngitis, laryngitis, tracheitis and bronchitis, even when the mucous surface is ulcerated.

As a proof of the efficacy of these waters it may be mentioned that the greatest singers come from Milan, Paris, St. Petersburg, Rome, London and New York to take these inhalations, for the effect upon the voice toning the mucous membrane as it does, and strengthening the vocal cords, they have learned to appreciate, and it would be difficult to mention any of the great artists from the operatic world who have not been benefited during the last two or three years by the Salsomaggiore Thermal springs.

There is another affection which I think I may claim to be the first to call attention to as being beyond all question greatly benefited by these inhalations of salso-iodic waters that is in that terrible complaint chronic catarrhal deafness. I have already sent several cases to Salsomaggiore and all have benefited and come back delighted with their health improved, power of hearing better, and one case I must particularly mention.

Miss B., a young lady of 27, had scarlet fever when a girl of 16, and since then had been liable, whenever she took cold to severe attacks of catarrhal deafness, each attack lasting longer than the preceding one, till at last the deafness became permanent and her hearing became slowly more and more difficult. Every kind of treatment was tried, specialists without number were consulted, and each one gave a gloomy diagnosis.

It was then that I was consulted for another affection and I recommended a cure of 21 days at Salsomaggiore, both for baths and inhalations. The young lady's general health rapidly improved, and above all there was such a wonderful improvement in her hearing that she stayed on a week longer than I had advised her to go for, and she left hearing better than she had done for years, and this condition has been steadily maintained. She had no return of catarrhal deafness, and intends to return again next year to take another course of inhalations, believing that she will then lose entirely the remaining slight hardness of hearing.

I should then recommend everyone who suffers from any form of catarrh of the throat, Eustachian tube or middle ear to go at once to Salsomaggiore, and I should expect them to return greatly improved or completely cured and grateful for having been sent there.

The affections then for which patients should be sent to Salsomaggiore, are:

1st. All gouty and rheumatic affections.

2nd. All nervous functional heart troubles, and particularly when there is an anemic condition associated with it.

3rd. In chronic or sub-acute pelvic affections and chronic affections of the uterus, or its appendages.

4th. In all affections of the nasal, buccal, or pharyngeal mucous membrane and in all bronchial ailments.

5th. In all cases of neuralgia, neurasthenia, and digestive atony and lastly in all cases of catarrhal deafness.

J. Gowing Middleton, M.D.,
Docteur de la Faculté de Paris.

Paris, France, February 2, 1903.

RETROSPECTIVE THERAPEUTICS.

Dry Hot Air in Rheumatism.—C. E. Skinner (*Jour. Adv. Therap.*) advocates the use of this agent in acute rheumatism, not however to the neglect of internal remedies. The salicylates he thinks should always be used. The results to be obtained with hot air are as follows:

First. Immediate relief of pain, however severe, which relief may be rendered permanent by repeating the treatments as often as the pain becomes troublesome; every four hours, if necessary.

Second. Shortening of the duration of the disease, which usually lasts only from five to ten days when hot air is thoroughly administered in combination with salicylic acid.

Third. Lessening of the liability of cardiac involvement because of the rapid control obtained over the pathological condition, whereby the infection is inhibited from further attacks upon other tissues.

Fourth. The lessened number and quantity of the drugs which it is necessary for the patient to ingest, because of the increase produced in the efficiency and intensity of their action at the seat of infection; hence rendering it possible to avoid drug intoxication.

Fifth. In many cases which prove intractable to other measures its employment will render possible the extinction of the trouble.

Sixth. When properly and judiciously applied, its use is never productive of any vicious after-effect; on the contrary, the patient's general condition is immediately and greatly improved.

Very Early Diagnosis of Acute Articular Rheumatism.—Of all the infectious diseases, acute rheumatism is perhaps that in which the physician can render the greatest service by early diagnosis and intervention P. Achalme (*Arch. Gén. de Med.*) Sept., 1902) observes that for two or three days preceding the rheumatic attack there is often an interference in the cardiac rhythm, with palpitation or irregular pulse. The pulse-beats occur in groups of unequal number and with irregular intervals, the heart beating in the same rhythm. The number of beats diminishes to between 50 and 60 to the minute, a distinction from arhythmia due to neurosis, arterio-sclerosis, toxemia, asystole, etc., in which the beats are more frequent. At the same time the apex-beat is increased in force, but, strange to say, the patient is unaware of any cardiac difficulty. The subjective symptoms consist of lassitude, apathy, loss of appetite, perhaps gastric disturbance. When one meets these symptoms with the peculiar arhythmia in a patient fifteen to thirty years of age, one should assume that a rheumatic invasion is taking place, and especially is the diagnosis probable if the patient has shown a previous tendency to rheumatism. The cardiac arhythmia is an expression of the invasion by the microbe or its toxins of either the nervous or muscular apparatus of the heart, and is a prodromal symptom occurring during the period of incubation or invasion.

Yohimbin in the Treatment of Impotence.—Yohimbin seems to be efficacious as a remedy for impotence. Silberstein records several successful cases (Vienna corr. *Med. Press and Circular*). It is a crystalline alkaloid obtained from the bark of the Yohimbehe tree. Oberwarth and Loewy used 0.005 to 0.01 of a gramme in the form of a hypodermic injection in dogs, which caused swelling of the testes and scrotum, followed by erection. Eulenburg and Besyer next used it clinically with a similar result. Silberstein showed two patients suffering from hypochondriacal impotence, whom he had treated with Yohimbin with perfect success. He records a number of chronic alcoholic paralytics with whom he obtained equally good results. Two cases of chronic bromide drinkers had their potency restored in a similar manner after one week's use of Yohimbin, although the patellar reflex had been lost for a month.

A Sign of Heart Failure.—Dr. Henry Jackson calls attention to one of the signs of cardiac failure which is of great import, though it meets but little notice in the articles upon this condition—namely, a discrepancy between the rate of the arterial pulse and the rate of the heart-beats. He has observed in many instances that in cases of extreme cardiac weakness the pulse was very slow, intermittent, and irregular, while the heart was rapid, and refers not to cases in which it is extremely difficult to count the pulse, as is always the case when the pulse is irregular, but to cases in which the most accurate taking of the pulse by trained individuals does not show a rapid pulse-rate, yet examination of the heart shows that its action is extremely rapid.

International Congress of Hygiene and Demography at Brussels.—The Department has received from the Belgian legation, Washington, under date of November 3, 1902, notice of the International Congress of Hygiene and Demography, to be held at Brussels from September 2 to September 8, 1903. An invitation is extended to the United States to be officially represented, and the wish is expressed, in behalf of the Minister of Foreign Affairs, that committees of propaganda, composed of persons eminent in medical science and hygiene, be organized in the different States, with whom the central committee at Brussels may correspond. Blank applications and copies of regulations and programmes, sent by the legation, are filed for reference in the Bureau of Foreign Commerce.

Diabetic Régime.—In the *Journal des Practiciens* (June 14, 1902) Linosier concludes that the régime ought not to be the same in all cases of diabetes. The absolute prohibition of hydrocarbons as food may be more harmful than beneficial. The general restriction of diet, which is too often varied in diabetics, is at least as important in diminishing glycosuria as the prohibition of sugar and starches. The benefits of the milk diet, or of the potato diet, are

certainly, in a large measure, attributable to this restriction.

The Uses of Alcohol.—The progress of scientific opinion, says the *Medical Times and Hospital Gazette*, indubitably shows that the utility of alcohol in medicine, and in general life as well, is becoming more and more circumscribed. At an interview, after his second attempt to swim the channel, Mr. Holbein is reported to have said that he did not believe that alcoholic stimulants would have been of any advantage to him in the last hour or two of his swim. He stated that he took expert medical advice some years ago on this question, and was strongly urged against the use of stimulants for persons engaged in athletics; and his own experience had proved this to be the case. Nearly every athlete of note will probably agree with the swimmer in this opinion. It is on mistaken grounds entirely that alcohol has been described as a food. It is nothing more or less than a stimulant which may urge the flagging energies to redoubled effort at the expense of greater fatigue when its effect has passed away. In the treatment of disease this is, of course, now generally recognized, and alcohol is chiefly prescribed as a means of either stimulating the heart when it is possible that otherwise syncope might occur, or of stimulating the digestive functions, especially in cases of convalescence or nerve exhaustion.

Vegetarian Athletes.—"Is a vegetarian diet proper for those who are to engage in athletic sports?" asks the *Revue Scientifique* (*Lit. Dig.*). We must certainly answer in the affirmative if we accept the results of a recent contest in Germany, where the six foremost places were gained by vegetarians. Says the *Revue:* "The trial consisted in a walking-match from Dresden to Berlin, 200 kilometers [124 miles]. It was an international championship contest, and the entries included French, English, Russians, Austrians, and Americans, besides about 20 Germans. A very severe rule forbade the contestants to stop for sleep, and gave them only one hour for eating. The start was made at 7.45 A. M. *Les Inventions Illustrées* remarks that the first six arrivals at Berlin were all vegetarians. Karl Mann, the winner, who was twenty-eight years of age, and who has lived on vegetable food for ten years, covered the distance in 26 hours, 53 minutes. He was declared the champion pedestrian of the world.

Capillary Dietetics.—That there is a relation between the scalp and the stomach, says *Health*, is a fact upon which the wise woman ponders, and she regulates her dietary accordingly.

Women who have the finest hair live principally upon fruits, grains and vegetables. Vegetables and cereals are hair tonics. Too much meat and milk cause atrophy of the roots, and, of course, the hair comes out as a result of this condition.

Milk is the poorest diet for the hair. Nor are tea and coffee much better as promoters of hair growth.

If the hair is falling out, eat little meat and drink no milk; live upon fruits and vegetables. Fruits give luxuriant locks, especially those containing iron. Prunes, cranberries and spinach are also useful articles of diet if one would have fine hair. Hair that is growing coarse demands a diet containing albumin and gelatine.

Septicemia.—Dr. Melville reports two cases of septicemia from appendicular abscess successfully treated with H_2O_2, Marchand fifteen volume being used, without any internal medication. The cases appear to have been grave, in one there was fecal fistula, and both made satisfactory recovery.

RETROSPECTIVE DIETETICS.

Rectal Feeding.—At the recent half-yearly meeting of Swiss practitioners (*Lancet*), Dr. Olten spoke on rectal feeding. It should only be used for short periods of time (five or six days) if no other nourishment is allowed, but for longer periods if subcutaneous or intravenous injections of sodium chloride solution are simultaneously given. It is disadvantageous to feed by the mouth at the same time, as simple enemas (Reinigungsclystiere) have to be given before each introduction of food into the rectum, and the mucous membrane of the bowel becomes irritated and diarrhea often ensues. Eggs are well suited for rectal feeding, and three at a time can be introduced if one gramme of sodium chloride for each egg is added (Huber). This promotes absorption. Albumoses (peptonized food) are absorbed much faster, being predigested, but it must be remembered that 60 grammes (two ounces) of peptones afford only as much nourishment as one and a half eggs. Mixtures of egg and peptone or peptone and sodium chloride are absorbed much more slowly. Milk is not advantageous for rectal feeding, as large quantities are necessary and these act as irritants; decomposition also takes place more rapidly. Wine is scarcely to be recommended, owing to its reflex irritative action on the small intestine and stomach. Starch is well absorbed, but far too slowly for practical purposes. Fatty substances must be avoided. The most important carbohydrate is sugar (either grape- or cane-sugar). Schonlein found that nearly 90 per cent. of such a solution was absorbed in one hour. It is not advisable to give more than one ounce or one and a half ounces, with ten times the amount of fluid, three times a day. It is always necessary to add opium or to give a suppository of opium. Rectal feeding is not to be recommended in phthisis or diabetes, but can be used with the best results after surgical operations, and especially during the acute stage of gastric ulcer with or without hemorrhage.

The Dietetic Treatment of Pulmonary Tuberculosis.—By Dr. N. D. Bardswell and J. E. Chapman, M. R. C. S. (*British Med. Journal*, Nov. 1st.) In determining the proper diet for a consumptive, allowances must be made for the sex, age, weight, work, and weather. Further the additional factors due to the existence of tuberculosis must be considered. The presence of tuberculosis causes increased waste of all tissues, especially of fat. The indication is, therefore, an increase in all constituents of the physiological diet. The patient may be under normal weight, so that the diet should be sufficiently increased to restore the tissues as well as to meet the current requirements of the body. A diet rich in proteid and only slightly increased in fats and carbohydrates produces the best results in inducing arrest of tuberculous processes. Proteid can be given in larger quantities and more easily than either fat or carbohydrate, which latter are disliked by the consumptive. Weight is put on at a moderate rate, and the physiological balance of cardiorespiratory functions and body weight is not upset. Although overfeeding is frequently associated with very satisfactory progress in the lungs, yet the administration of what is practically only a small increase on the physiological diet is quite sufficient to ensure equally satisfactory im

provement in the lung condition, with much less risk of injurious consequences, and with the minimum discomfort to the patient.

The Influence of a Saccharine Diet on Gastric Acidity.—A diet consisting largely of saccharine substances is commonly supposed to favor acidity of the stomach, but from certain experiments made by W. G. Morgan (*Archiv. fuer Verdauungs Krankheiten*, VIII., 1, 2; *Centralblatt fuer innere Medicin*, Oct. 11; *N. Y. Med. Jour.*) it seems probable that such acidity is not due to an actual increase of the amount of hydrochloric acid in the gastric juice; indeed, quite the opposite effect was observed. A healthy workman took for five days, together with his usual food, large quantities of sugar, between two and three ounces of cane sugar and twice that amount of maple-sugar syrup. The total acidity of his gastric juice fell from 50 to 25, and the free hydrochloric acid from 40 to 12.5. Acting on the knowledge thus acquired, Morgan has employed sugar successfully in the treatment of hyperchlorhydria.

Dietetic Treatment of Acute Coryza.—Sternberg has recently called attention to a simple procedure, which was recommended by Williams in the middle of the last century (*Bost. M. & S. Jour.*). His plan was to "dry it up." Williams found, and Sternberg echoes his opinion, after an experience of years, that if liquids are totally excluded from the diet for twenty-four hours the congestion in the head, nose, and conjunctivæ, and the irritating nasal discharge are greatly lessened. If the treatment is continued for the second day, the coryza will usually be brought to an end except for an occasional discharge of gelatinous, opaque mucus, which is apt to appear toward the close of such a catarrh. Of still more importance is the fact that the coryza is not followed by a cough, and that the treatment is a prophylactic against otitis media, or the extension of the inflammation into the adjacent nasal cavities.

To be successful, the treatment must be started at once. Fever is not a contra-indication, but chronic nephritis is. Total abstinence from liquids is not absolutely necessary, but one should indulge in but a few teaspoonfuls at a meal.

GLEANINGS.

IS COLOR-BLINDNESS PREVENTABLE?

In a lecture delivered before the Royal Institution of Great Britain twelve years ago, Dr. Brudenell Carter declared that the condition of color-blindness is absolutely incurable and incapable of modification by training or exercise in individual cases. This discouraging view has prevailed generally, although the interesting fact that only one or two women in a thousand have a defective color sense was known, and was generally accounted for by the fact that females from their infancy pay more attention than boys do to finery, fancy work, flowers, feathers, ribbons and gaudy dress in general. It has also been known for some time that, in the case of civilized races, color-blindness is more frequent among the poor than among the wealthy and better educated. This suggests that training has something to do with reducing the number of cases. If it were simply a question of mental evolution in general we should find the defect specially prevalent among savages and barbarians. As a matter of fact, it is rarer among them than among civilized men.

Fresh evidence in confirmation of the view that color-blindness is capable of modification, or rather prevention, is provided in the *Educational Review* by Alida S. Williams. Holding that this defect is not the result of retinal imperfections, of brain lesions, or of some mysterious freak of inheritance, but simply of insufficient color training in childhood, she recently tested this view by examining in one of the primary schools of this city 580 boys whose ages ranged from six to twelve years. These boys had received the careful, systematic color-training now given in our public schools to children of both sexes, and the result was that, instead of the twenty-four cases of color-blindness to be expected according to the current belief, there was only one, and that one yielded to special treatment. The boys delighted in the brilliant hues placed before them, and convinced the writer that it is "not only unwise, but unkind," to starve a child's color sense. The result obtained is of value, not only with reference to the marine and railway service of the future, but as suggesting the important educational question whether there may not be other perceptive weaknesses in adults, which might be prevented by the proper training of the senses in the impressionable days of childhood.

THE TIME FACTOR IN OPERATIONS.

The *British Medical Journal* (Oct. 4, 1902) draws attention to a fact too often overlooked by surgeons, that, other things being equal, the amount of shock varies directly with the amount of time the patient is on the operating-table. Before the days of anesthetics celerity in operating was the first consideration; but, with the advent of anesthetics, operating became much slower. It is, however, now becoming more and more obvious that expeditiousness is just as important as ever; and as surgeons become more and more impressed with this fact, strychnine injections and saline infusions will gradually come to be more seldom required.

UNCINARIASIS AND THE "POOR WHITES."

The sanitary conference of American republics closed at Washington last week with an address by Dr. Charles Wardell Stiles, zoologist of United States public health, and well-known in the medical world as the discoverer of uncinariasis, or the hook worm disease, as it is called. This disease has only been known to medical science since last May. Dr. Stiles has just returned from a tour of the Southern States, made with the purpose of finding a remedy for the malady and to acquire a knowledge of it in all its phases.

According to the newspaper reports, Dr. Stiles explained that uncinariasis produces a condition of which the symptoms are greatly like those of continued malaria, for which it was almost invariably mistaken. The presence of this disease in past years, he said, had resulted in the pitiable condition of the poor whites in many of the Southern States. Its presence in succeeding generations had resulted in their inferior physical development and mental powers, and is the cause of the proverbial laziness of the "cracker." This laziness, Dr. Stiles says, is an abnormal and not a normal condition; and attention paid to this matter by planters and farmers in the Southern States would result in not only improved conditions generally, but a great increase of the percentage of work which they would secure from their employees.

The evils attributed to child-labor in the South, Dr. Stiles said, were really due to the general presence of this disease, and he made the remarkable statement that children who came from the country districts to work in the mills became generally greatly improved as a result of the better sanitary conditions in the cities and the better facilities for the cure of the disease.

Dr. Stiles said that the disease had been diagnosed, and it was susceptible of cure. The trouble was to identify it and prescribe the proper remedies. To do this it would be necessary to educate the physicians in the sand districts as to the symptoms, causes and effects of the disease, and to this end the department of agriculture would shortly issue a report prepared by him, which would be widely distributed in the Southern States.

In describing the symptoms of the disease, Dr. Stiles said that it created an abnormal appetite for different things in individual cases, and that the "dirt eaters" were almost all sufferers from it. The disease itself, he asserted, was not due to the habit of eating dirt, as some physicians have claimed, but, conversely, the habit itself is due to the disease. The "pickle eaters" of North Carolina were also sufferers from the disease, and their abnormal and peculiar appetite was the result of a certain stage of the disease.

Dr. Stiles concluded by urging that information concerning the malady be spread broadcast and predicted that when it was well under control a gradual and noticeable improvement would take place in the condition of the poor whites of the South. The strongest man made to live under conditions approximating those under which the average "cracker" abides would soon contract the disease and in a short time reach the same condition of physical and moral stagnation as the poor whites themselves.

A number of the South American delegates expressed their belief that such a disease existed in certain South American countries and was responsible for the backward condition of the people there. They promised thoroughly to investigate the subject on their return to their respective countries.

AURORA BOREALIS.

The latest theory of the Aurora Borealis is that of Prof. Unterweger who supposes that cosmic ether which fills the celestial spheres, when met by the earth's movement, is compressed or condensed in front of the earth in the direction of its movement, and dilated or rarified, on the contrary, behind it. This cosmic ether is more condensed before the earth than that which is borne along in the whirl of the world at from 33 to 44 miles per second, and is more rarified behind. The result is that one half of the earth, or the northern hemisphere, will be negatively electrified and the southern half positively electrified with the space regions which they are leaving. Only the magic of the spectroscope will probably push aside the curtains of this grand mystery and reveal the truth.

CONSUMPTIVE SANATORIUM FOR ACTORS.

We learn from the *Dramatic Mirror* that a strong effort is being made to establish a sanatorium for actors and others associated with the theater, suffering with consumption. The Actor's Fund is now aiding in the support of more than 100 actors and actresses in Colorado and Arizona but the sum per week allowed is insufficient to care for persons wholly dependent upon it for support. This movement will appeal strongly to the sympathy of the public.

SERUM FOR THE CURE OF SCARLET FEVER.

Dr. Baginsky of Berlin, Children's Hospital gives the results of 12 years' research and experiment in the treatment of scarlet fever with the newly discovered serum. He claims to have established the fact that scarlet fever has a microbic origin known as streptococcus. The germ is one which appears also in erysipelas and occasionally may be encountered in complications with diphtheria. During his 12 years of investigation, 701 patients have been subjected to the antistreptococcus serum treatment with the result that the character of scarlet fever has been definitely established and its germ classified with bacteria. The percentage of deaths has been reduced to such an extent that only eight per cent. of scarlet fever patients succumbed. This was far below the percentage of death in the Willard Parker Hospital or in the private practice of physicians in this city.

HEALTH OFFICER.

We are glad to see the renomination by Gov. Odell of Dr. Albert H. Doty as Health Officer of the port of New York. Dr. Doty in his long administration has not only received the warmest commendation from the business men of this city, but from a scientific standpoint from the entire medical profession.

THE WRONG NAME.

"The trouble with you" the doctor said after examining the young man, "seems to be that something is the matter with your heart." "With my heart!" "Yes, to give it a name, it is angina pectoris—" "You'll have to guess again doctor," said the young man. "That isn't her name at all."

CANCER'S ALARMING GROWTH.

Perhaps the most alarming feature of the past year's death report of London, England, is the statement concerning the growth of cancer. While the deaths from consumption show a gratifying diminution, cancer makes steady headway. In 1901 this disease claimed 3,982 victims, being at the rate of .93, as compared with .78 in 1891 and .42 in 1851-60.

The age at which cancer most affects people is indicated by the fact that 398 died at the age of thirty-five to forty-five, 891 between forty-five and fifty-five, 1,124 between fifty-five and sixty-five, 928 between sixty-five and seventy-five, and 394 between seventy-five and eighty-five.

Weigh the Baby Often.—The scales are the measures of a baby's progressive nutrition. During the first week the child loses, and regains the loss after the establishment of lactation. At the end of the first week it should show the initial weight. After the first ten days, there should be a steady, uninterrupted gain in weight, approximately as follows: A loss of nine to eleven ounces the first three days; then a steady gain. For the first four months an average of eight ounces a week or two pounds a month; from the fourth month on to the sixth the gain is less rapid, or four ounces a week, one pound a month.

From six to twelve months the average gain will be even less. At seven months the babe has doubled its birth weight.

Inefficiency of Fumigation.—All methods of fumigation have been discarded since formalin was introduced, and almost absolute reliance is placed upon this. G. E. Pfahler (*Proc. of Path. Soc. of Phila.*, July, 1902) has, however, noticed epidemics of contagious diseases break out in the children's wards which had been disinfected with formaldehyde gas, to which he could trace no contagion from the outside. He therefore tested the efficacy of a formalin candle which had been highly recommended. In the first experiment, cultures of the staphylococcus pyogenes aureus were placed near the point of generation of the gas. All the cultures grew well. From the second experiment it was found that the ordinary germs found in rooms grew as well after fumigation as before. The same was the case when the gas was generated and passed through the keyhole for 13 hours. The fact that epidemics can be controlled seems to depend more upon the cleansing of the floor and walls than upon any gaseous disinfectant. Though formalin is the best disinfectant known, there is need for a more satisfactory method of application, which would mean an apparatus capable of generating the gas ten times as fast or in more concentrated form.

A Double Catheter for the Prevention of Cystitis in Women.—Rosenstein (*Centrlbl. f. Gynaek.*, May 31, 1902, *Therap. Gaz.*) presents illustrations of a glass sheath which he has devised for insertion into the outer two-thirds of the urethra previous to the introduction of a catheter in order to prevent the carrying into the bladder of the bacteria which are always present in this portion of the female urethra.

The sheath is made in the form of a hollow cylinder, 3 centimeters long, is cone-shaped at one end, and at the other end is attached to a hollow staff, 10 centimeters long, to permit of the easy introduction of the catheter. The lumen of the staff corresponds to the outside diameter of the catheter, while the calibre of the cylinder is made considerably larger in order to prevent its coming in contact with the point of the catheter. The cylinder is also provided with a collar, which guards against its being introduced too deeply into the urethra. A similar collar on the catheter itself arrests its tip just short of the point where it would come in contact with the bladder wall.

By means of this simple contrivance the catheter cannot become contaminated during its passage into the bladder.

Ivy Poisoning.—It is said there is nothing better for ivy poisoning than the old prescription of calomel sixteen grs., and lime water four ounces, to be mixed and applied three times a day.

The Surgical Treatment of Anuria.—Dr. Arthur Dean Bevan presented a paper on this subject before the Chicago Clinical Society, Jan. 5, in which he detailed the history of a case of anuria (total suppression of urine) recently operated upon with satisfactory result. From a careful study of the literature and of his own case, the essayist reached the following conclusions: (1.) The clinical importance of recognizing the three forms of anuria—obstructive, reflex, and non-obstructive; (2) the imperative necessity of surgical interference in the obstructive and reflex forms, and its possible value in the non-obstructive cases; (3) that in the first two varieties a rapid nephrotomy of the side of pain, tenderness and muscular rigidity is the operation of choice. If necessary, do not hesitate to make a double nephrotomy; (4) that nitrous-oxide anesthesia is probably to be preferred; (5) that time-consuming operations to relieve permanently the obstruction are to be postponed to a later period, after the patient has recovered from the anuria; (6) operate by the beginning of the third day.

Dr. J. Robie Wood has just informed us of a severe case of puerperal convulsions at seven and a half months which could not be controlled even after forced delivery, until Dr. George M. Edebohls, who was called in, decapsulated both kidneys, the immediate result being a complete cessation of the convulsions. The patient continues in a favorable condition. Before operation the urine was solid with albumen and contained hyaline, granular, fatty and other casts. As this is the first time in the history of puerperal eclampsia that this operation has been performed under such conditions it will prove of great interest to the profession. It may be remembered that decapsulating the kidney for Bright's disease, which has proved a great success in this country and in Europe, was first performed by Dr. Edebohls.

OBITUARY.

Dr. T. Gaillard Thomas died suddenly at Thomasville, Ga., February 28th, in the seventy-second year of his age. Dr. Thomas came to New York from Georgia immediately after his graduation in Charleston in 1852. Shortly after his arrival in this city he became associated in practice with Dr. John T. Metcalf, at that time a prominent physician in the city. During his professional life he was connected with many of the leading hospitals and was at different times professor of obstetrics and gynecology in the College of Physicians and Surgeons and, the New York University. Dr. Thomas was very popular as a teacher and writer and in his specialty was distinguished as an able diagnostician and for his skill as an operator. His work on diseases of women was considered one of the most complete and advanced treatises on that subject then in existence. The book went through seven editions in America and was translated into five languages. Until within the past few years Dr. Thomas was identified in ethics with the most bigoted and intolerant of his profession, refusing to recognize any physician who did not bear the regular stamp of orthodoxy. Within the past few years, however, he has shown a liberality to cultured men of all schools worthy of the advanced spirit of the profession.

Dr. Walter Pardee died at the residence of his son Dr. Ensign B. Pardee, February 11th in the eighty-second year of his age. Dr. Pardee was for many years a leading practitioner in this city and was one of the oldest homeopathic physicians in the State.

Dr. S. Cullen Hanford, one of the oldest physicians of the State and for half a century an eminent practitioner in Brooklyn, died February 24th in the eighty-second year of his age. Dr. Hanford was a graduate of the New York University in the class of 1846.

Dr. Reynolds, Commissioner of Health, of Chicago, gathers from vital statistics of the Federal Census that during the past twenty years there has been a decrease in the whole country of the death rate in consumption 20.7 per cent., and an increase of 7.4 per cent. in pneumonia.

MISCELLANY.

—It is reported that a movement is on foot to found a Chinese Hospital in this city conducted along strictly Oriental lines, at least in so far as therapeutics is concerned.

—Dr. George C. Pardee has been elected Governor of California. He is an oculist of considerable local reputation, a graduate of Leipsic University, and a man of rare personal endowments.

—*Medical Summary* quotes Dr. A. H. Niemiller as saying that the best treatment for hot flashes in women after the menopause has been fluid extract of eucalyptus globulus, continued for some time.

—A London physician declares that a person in robust health walks with his toes pointed to the front, while one with his health on the wane gradually turns his toes to the side, and a bend is perceptible in his knees.

—Dr. Baccelli, who is the Minister of Agriculture in the Italian Government, has been presented with a sumptuous and artistic shield in token of the gratitude of the agricultural interests for the benefits conferred by him in the discovery of a cure for aphtha epizootica (foot-and-mouth disease).

—A careful inquiry into the average height of the different nations has shown the English professional classes to be the tallest adult males, attaining the high average of 5 feet 9.14 inches. Next on the list come the males of the United States, a minute fraction behind the Englishmen. Most European nations average 5 feet 6 inches for the adult male.

—A writer in *Southern Drug Journal* says: "I have found that wet salt is the most efficacious remedy for a burn. It relieves all pain in about an hour, and palliates immediately. It seems to toughen the tender skin, which does not subsequently peel off, but hardens and protects the injured tissues beneath. I have never tried it for severe burns, but can testify to its efficacy in the every-day burns with which most of us are painfully familiar."

—The *British Medical Journal* for October 25th, 1902, in an article on the discovery of anesthesia, concludes as follows: "After judicial weighing of the evidence and careful allotment to each pioneer of his due, the scientific world must, we think, agree with Oliver Wendell Holmes that "this priceless gift to humanity went forth from the operating theatre of the Massachusetts General Hospital, and the man to whom the world owes it is Dr. William Thomas Green Morton."

—Dr. W. H. Park, of the New York Department of Health, has made some experiments in order to determine the value of lemon juice as a disinfectant in the prophylactic treatment of typhoid fever. A microscopical examination of the cultures of typhoid bacilli which had been subjected to the action of the acid showed that although the agent killed the micro-organisms, too much of it was required, and too much time was taken in the consummation of the chemical action to render it of any real practical value.

—Dr. Harry Helfrich, of Altoona, Pa., celebrated his ninety-ninth birthday July 26th. He is the oldest resident of Lehigh County and the oldest physician in active practice in Pennsylvania. He is as active as a man of sixty. His memory is unimpaired, his digestion sound, his appetite good. His hair is just beginning to turn gray, and he has never worn spectacles. He is about five feet five inches tall and of slight physique. While not a total abstainer, he rarely takes alcoholic drinks. He has always been fond of tobacco.

—Dr. W. H. Baldwin (*Alk. Clinic*) has found that when all other foods have given out, in a case of typhoid fever, ice cream will be gratefully received by the patient longer than any other nourishment, and he has never seen any bad results; on the contrary, it does good, is well borne and at times appeared to modify the disease. It should be home made, with plenty of rich cream and raw eggs incorporated. Feed in small quantities and often, varying the flavor to suit the patient's taste.

—It is stated in the English newspapers that the prevalence of appendicitis has suggested to one of the most prominent firms in Lloyd's that the public might like to insure against that disease. For a premium of one dollar the assured, if he has to undergo an operation for appendicitis, will have all his direct expenses paid up to $1,000, and in the event of his death under or from the operation a total sum of $1,000 will be paid. Although the idea has quite recently been mooted it is said that a large number of people have already availed themselves of this insurance.

—"Dictating" sore throat is an affection of the vocal cords that business men get from the odd, strained, high voices which they use in dictating to their stenographers, according to the *Philadelphia Record*. A man of big interests will dictate over one hundred letters a day at times. His throat is so sore when he is done that he has to take some oleaginous and soothing medicine. The disease is distinctly a modern one, a sign of these complex modern times. The only cure for it is to teach men to dictate in their natural voices (a thing that seems to be impossible), or to compel them to cease dictating altogether.

—According to the records of 1901, Ellsworth, Wis., with a population of 1,500, was the healthiest place in the United States. But two people died in this town, one of the deaths being from smallpox. Iowa is the most healthful State, showing a mortality record for the year of only 9.2 per 1,000. Arizona is the most healthful territory, with a record of 8.3 per 1,000. Louisiana has the highest percentage of deaths, her record being 20.65 per 1,000. Among the cities Charleston, S. C., heads the list, with a death-rate of 29.11. New Orleans comes next, with 24.44; Washington, D. C., 21.14; New York, 20; Boston, 19.7; San Francisco, 19.34; Cincinnati, 18.88; Philadelphia, 18.27; St. Louis, 17.67, and Chicago, 13.88.

—"A German investigator," says the *Scientific American*, "has recently discovered an exceedingly valuable and important property of aluminum, which consists in its application as a whetting agent, the effect produced on cutlery set with it being most astonishing. Though a metal, aluminum possesses the structure of a fine stone, has a strong dissolving power, and develops, upon use for honing, an exceedingly fine metal-setting substance of greasy feel, while showing great adhesion to steel. The knives, etc., treated with it quickly obtain such a fine razor-like edge that even the best whetstone cannot produce a like result. Thus, knives which had been carefully set on a whetstone, when magnified a thousand times, still exhibited irregularities and roughness in the edge, while the edge of knives sharpened on aluminum, upon exactly the same magnification, appeared as a straight, smooth line."

ORIGINAL ARTICLES.

THE PREVENTION OF INFECTIOUS DISEASES.

BY THADDEUS ALONZO CASEY, M.D., ALBERTVILLE, ALA.

THE ultimate object of human effort is happiness; but disease and death destroy happiness, and bring pain and sorrow instead.

The prevention of one epidemic of yellow fever, smallpox, or typhoid fever, is valuable beyond computation in dollars and cents, and should, therefore, whenever possible, be accomplished regardless of cost.

However brilliant may be a surgical operation for the relief of appendicitis, hernia, etc., it concerns but one person; whereas, a single case of infectious or contagious disease concerns primarily the whole surrounding population, and secondarily, the entire population of the State. Indeed, it often happens that the announcement of a case of infectious disease in a region, however remote, excites the interest and attention of the whole civilized world.

The above being undeniably true, it follows that no subject deserves more serious and careful consideration by individuals, communities, States and nations, than the prevention or control of contagious or infectious epidemic diseases. It is not strange, therefore, that some of the greatest intellects in our profession have been devoted to the study of this subject, and the labors of such men as Jenner, Eberth, Koch, Pasteur, and many others, have accumulated a mass of useful knowledge concerning the etiology and pathology of such diseases that is more valuable to mankind than it would be easy to estimate. It is strange that under these circumstances and in the light of repeated demonstrations, there can still be found, not only among the intelligent laity, but even in the ranks of medicine, men who question the truth of modern discoveries, even to the usefulness of vaccination.

If a beneficent discovery like vaccination, whose protection has been so thoroughly demonstrated, still meets with doubt and opposition at the end of a hundred years, the outlook for the acceptance of scientific truths not so easily demonstrable to the laity is not encouraging.

There are constitutional doubters everywhere, men who doubt everything, and our profession is not free from their pernicious influence.

Until by education of our doctors in the brilliant results of modern investigation, we can present an unbroken front to the skepticism of ignorance, we cannot hope to accomplish the complete downfall of opposition to the measures necessary for the protection of humanity against contagious epidemic diseases. When every physician is qualified to instruct his clientele how to protect themselves against such contagions as typhoid fever, pulmonary tuberculosis, diphtheria, etc., and makes it his duty to do so, on all proper occasions, the general public will soon become educated to a point that will insure their support of every sanitary measure we find it wise to suggest. It is along this line that the success of public sanitation lies.

This paper will call special attention to three divisions of the subject. First, the modes of conveyance of infections; second, the importance of early diagnosis, as a sanitary necessity; third, the duty of the State to provide facilities for accurate scientific investigations, and for the care of the consumptive poor.

If we know from what quarter a danger threatens us, in what shape it will come, and what will bring it, as well as what will not bring it, we are at once placed in a position favorable for defence.

We know that hydrophobia is transmitted by the bite of a rabid animal, and the knowledge enables us to so control the distribution of rabies that most physicians will spend their lives in active practice without ever seeing a case. Indeed, so rare is the disease, that some of the constitutional doubters doubt its existence.

I believe that the propagation of each and every contagious disease could be as certainly and efficiently prevented as rabies, if we as thoroughly knew and understood the means by which it could be communicated.

As it is, every human being should know that a slight exposure to a mild case of a contagious disease may be followed, in a person exposed, by an invasion of the severest type. Thus, varioloid may communicate fatal, confluent smallpox: the sting of one infected mosquito, if the latest theories be correct, may result in a malignant yellow fever, and a single drink of water can convey the germs of death from typhoid fever. These truths should be proclaimed everywhere, until the laity would learn to protect themselves from unnecessary disease and suffering.

Infection and toxemia differ widely. Toxemia, poisoning of the blood, as by the bite of a snake, is fatal or not, according to the power of the patient to endure the results until the poison is eliminated. But infection is the sowing of the seeds of disease, which will germinate and multiply beyond computation. Concerning the manner of transmission of infections there has been much discussion and difference of opinion.

Dr. A. H. Doty, Health Officer of the port of New York, after an immense experience, and the most favorable opportunities for observation, says that most of the laity and many physicians believe infection can be transmitted from a sick person to a well one by the clothing worn by a third who has been exposed, but is not infected. That is to say, clothing can carry infection. This he calls a seductive theory, but states that in an experience of over 20 years spent in dealing with infectious and contagious diseases, he has not seen a single case in which the disease was transmitted in this way. In almost every case where such transmission was suspected it could be shown that the persons affected had been in contact with others sick with the same disease, though perhaps, in an extremely mild degree.

He gives numerous instances, which the limits of this paper will not allow me to quote, where nurses, attendants, ambulance drivers, surgeons and other inmates of hospitals devoted to the care of patients suffering with smallpox, typhus fever, and other contagious diseases, went freely in and out of the hospitals, mingled with their friends at large, and spent their nights at home with their families, and in no instance did these men communicate typhus fever or smallpox to their friends.

That insects are the carriers of disease is no new theory.

It is well known that the cattle tick is the carrier of Texas fever, and the common domestic fly is almost known to be capable of transmitting the bacilli of typhoid fever. The current theories concerning the relation the anopheles mosquito bears to the transmission of the malarial parasite are well known. The recent investigation of the part the culex mosquito plays in epidemics of yellow fever is no new thing. Twenty years ago, Dr. Finlay of Havana made experiments along this line, by causing infected mosquitoes to bite fresh recruits from Spain, and the conclusion reached by him and his collaborator, Dr. Delgado, was that the transmission of yellow fever by the culex needed no further proof. In 1881, he read a paper on the subject before the Ha-

vana Academy of Sciences. The recent experiments of Drs. Reed, Carroll, Agramonte and Lazear, of the United States Army, resulting in the martyrdom of Dr. Lazear for the sake of science, are fresh in our minds. Suffice it to remind you that their conclusions are similar to those of Dr. Findlay. If further observations confirm these conclusions, sanitarians will have the fly and the mosquito to fight instead of fumigating freights and cargoes, and the clothing of travelers.

Upon whatever else sanitarians may disagree, all are united in the belief that the patient sick with an infectious disease can communicate it to any well person, who is not immune. Therefore, it follows that it is of supreme importance, when a patient is thus affected, that the nature of his disease should be recognized at the earliest possible moment.

The treatment of the patient and the protection of the public demand this. This is especially true of tuberculosis. As when a house is on fire the detection of the fact before it has spread to an uncontrollable degree is all important, so is it with infectious diseases. In such cases concealment, or failure to recognize, means an epidemic, with all its dangers, losses, and terrors. In January, 1900, a young man fled from Alabama City on account of smallpox, and stopped at his father's home, 10 miles from mine. He sickened and died the third day, and though I had not seen him, I had no difficulty, from the description of his case, in pronouncing it smallpox of hemorrhagic type. Providing myself with virus, I went there to vaccinate the people of the neighborhood, to protect them from danger. To my chagrin, they declined. Twenty days later the young man's father was taken ill with typical symptoms of smallpox. I saw him the third day, but he had diagnosed his own case as "a bad cold." On the tenth day he died with confluent smallpox.

At my first visit to him the family, convinced and alarmed, consented to be vaccinated. There were six of them. Three had smallpox, three varioloid. All recovered. The county spent $500, business was suspended, schools and churches closed, and a state of partial panic prevailed. All this might have been avoided, and at least one life saved, by the early diagnosis of the first case, and general vaccination.

In the same year a young lady in my neighborhood died with typhoid fever, contracted while visiting a house where there was an ambulatory case of the disease, in daily association with the family. Another case originated, so far as I could judge from my investigations, from a single drink of infected water. The lesson to be learned from such instances is first, a knowledge of the existence of the danger; second, a knowledge of its manner of propagation; third, a knowledge of the means of avoiding infection. All these things should be known by the general public.

The State should maintain a sanatorium for the care of the consumptive poor.

For reliable statistics concerning the ravages of pulmonary tuberculosis I have relied upon the statements of the Health Department of the Sanitary Bureau of New York. These statistics show that there is an average of 172 deaths per week in the City of New York from tuberculosis. This is equal to 8,944 deaths per year! Think of it! More than one death for every hour of the year in one city from one disease alone.

The ravages of any disease of appalling fatality have usually given to that disease the name of a plague. The same consideration has caused pulmonary tuberculosis to be termed the great white plague. Last year it was estimated that in the city of Baltimore alone there were 10,000 cases. Medical literature teems with articles concerning it. A "Tuberculosis Congress" is to meet in London this year, and Prof. Robert Koch will give the opening address. There is no disease in the entire list that slays more victims and commands more study at home and abroad. As a result, the importance attributed to heredity in its propagation has been greatly modified. It is now believed that though a susceptibility may be inherited, the disease itself is almost never planted in the system of the unborn child. This being true, it follows that the seeds of the disease are communicated from the sick to the well; and, further, that if the disease can be recognized in its incipiency, it can be controlled, segregated, and finally obliterated, from the earth. Modern experience points out as the best house for a consumptive, one consisting only of roof and floor, with adjustable side walls of canvas. The State should provide sanitaria like these for the care of the consumptive poor, where they could be maintained in comfort, and under circumstances most favorable to their recovery, and at the same time suitable regulations could be enforced for their protection from self-reinfection, and from their disseminating the germs.

The State should also maintain a Laboratory of Pathology, where, free of all cost, the different counties could have made such microscopical, chemical, or cultural investigations as the conditions might demand.

A small sum of money thus expended would return a large sum of vitally useful information to our citizens.

Dr. Wyman, in his paper, read at the Pan-American Medical Congress in Havana, places the importance of sanitary conference above that of the Peace Conference at The Hague. There can be no doubt of the importance of this matter, nor of the fact that it is one subject concerning which all nations are in harmony.

Something has recently been said about establishing a permanent home for this Association. Should such a home ever be established, I would like for this inscription to be emblazoned on its walls in the most conspicuous position:

SANITATION IS THE CROWNING ACHIEVEMENT OF MEDICINE.

RECENT ADVANCES IN MEDICINE.

BY HENRY TAYLOR, M.D.

THE old fashioned growing pains are now known to be simply rheumatic in character; growth normal in nature is painless; so it is with the so-called fever of growth. It is no doubt true that as an entity the fever of growth does not exist, for growth cannot determine fever any more than it does pregnancy, puberty, or senile involution.

The conditions which have been confused under this term can be separated into several factors as follows: some are febrile states more or less clearly characterized (ephemeral fever, the fever of fatigue, gastric derangements, mild acute articular rheumatism, mild attacks of typhoid fever, intermittent fever, etc.); others are attenuated forms of acute osteomyelitis; epiphysial pains may be observed in young subjects in any febrile condition; notable growth of the body may show itself as a sequel of any disease of childhood or adolescence, whether acute or chronic; it is therefore impossible to establish a group of symptoms not constituted by the artificial association of dissimilar cases.

Ebstein divides gout into two great classes: (1) Those of joint affections; (2) those attacking the kidneys. The first form is the typical form of gout, where the joints and their surroundings become affected by

the morbid process. The attack usually comes on by night, and the favored seasons of its approach are the springtime and the end of the autumn season. After localizing it in the great toe, he said accumulations of gouty matter were to be observed in young people afflicted with the disease. These enlargements are closely connected with the uric acid found in gout. Ebstein is opposed to the opinion held by Garrod regarding these enlargements—*i.e.*, that they are caused by an excess of uric acid in the blood, which, in the form of sodic salt, becomes deposited in the tissues of the joint, and by this gradual accumulation and final irritation produces the gouty inflammation commonly accompanying this affection. He considers this deposit of the urate of soda to be the result of the inflammation, and not the cause, as Garrod believes it to be. He next referred to the effect of the gout on the nervous system, through which he considers the heart and blood vessels become affected. He is quite satisfied that gout is hereditary in families, but that it does not confine itself to the indolent and high-fed, but rather afflicts the active and moderate liver and the industrious class. In females the attacks are not so intense as in males. Men suffering from gouty affections may reach a good old age, though the diathesis is fraught with much danger to life.

Pfeiffer holds the view that uric acid is diffused through the fluid tissues of the body in a very insoluble form, which soon becomes deposited throughout the body, or is localized in the form of swellings. The earliest effects are the retention of uric acid, which rapidly accumulates in the system until every organ becomes more or less affected; or, if it happens to expend its force on a single organ, death may be the result.

The first indication, therefore, in the treatment would be the excretion of a proper amount of urea and uric acid in the urine, since their retention soon produces a low cachectic condition of the system. After this, the administration of a salt that will convert the insoluble substance into a soluble substance allowing of rapid elimination, soon relieves the pain and reduces the swelling. The first important step is to correct the diet. This should consist largely of albuminous matter, as beef, eggs, etc., as well as fat and green vegetables; but fermented drinks, starch, and sugar should be forbidden. The use of a meat diet is very important, as the retention of the urea and uric acid quickly produces a cachectic condition of the system which must be early combated in the treatment, but the meat diet does more than supply this necessity, for the salts of the meat, when taken into the system, have a solvent influence that speedily raises the elimination of urea and uric acid to even more than the normal quantity. The same may be said of all proteid substances, and more particularly of eggs. Sour milk and cheese should be avoided, but fruit and salads are beneficial, as they alkalize the alimentary canal, while wine and beer have the opposite effect, and should be strictly prohibited.

The medicinal treatment should consist in the administration of some alkaline salts, and the carbon salts seem to be the best, though phosphoric acid and boracic acid have in some cases proved beneficial. Hydrochloric acid and sulphuric acid are objectionable. All alkaline and mineral water should be given in small doses to begin with, and gradually increased. The mineral water of Fachingen is the most efficacious, although those of Kaiser Freidrichquelle, of Offenbach, are to be commended. The author knows of nothing that could surpass the mineral baths of Wiesbaden in the treatment of gout. One week with a thermal bath of 28° Beaumur daily will restore to health the most gouty patient, and a prolongation of the treatment will soon dissolve any old chronic swellings that might happen to be present. In very rapid and acute cases he thinks the best good can be obtained by the free use of salicylate of soda.

Aufrecht has had an interesting experience in the treatment of rheumatism. As a result of extensive trials he came to use salicylic acid in acute cases to the exclusion of all other remedies, and with complete success so far as the disease was concerned. He used the acid in full doses, 90 grains *pro die* for the first two or three days, and 60 to 45 gr. *pro die* during the following eight or 10 days.

Unfortunately this treatment could not be fully carried out in every case. Burning pain in the stomach, vomiting, tinnitus aurium, or dyspnea sometimes made the drug unbearable. The use of salicylate of soda in corresponding doses was no improvement. Not only did it cause the same disagreeable symptoms as the acid, but in Aufrecht's hands was not as effective in subduing pain and fever.

On the introduction of salol, a trial of it showed a marked improvement in many respects. Causing but little local or general disturbance, its use could be continued almost indefinitely. Thus, one patient of Aufrecht's took altogether more than 3,500 grains in doses of 90 grains daily. On the other hand, in acute polyarthritic cases it was not so effective as salicylic acid. Whereas the latter usually subdues pain and fever in the first 24 hours, salol requires three or four days, though pain was greatly ameliorated within the shorter period.

In consequence of its many advantages salol was adopted as the routine treatment by Aufrecht, but on the occurrence of a fatal case of acute endocarditis under its use—a thing not met with among 600 cases treated by salicylic acid—it was discontinued. Since then what might be called the mixed treatment has been followed. In this, acute cases receive during each of the first two days 90 grains of the acid, after that the same amount of salol. Later, the patient still remaining in bed, the salol is reduced to 60 grains daily. As salicylic acid is usually well borne for two days, but frequently no longer, this recommends itself as the best routine treatment. If possible, the acid can be continued, if, on the other hand, it can not be taken, salol alone may be used.

In chronic articular rheumatism salol is preferable in every respect, not only avoiding the dangers attending prolonged use of salicylic acid, but offering more positive assurance of cure.

Braeutigam and Nowack in regard to the well-known danger of nephritis folowing the use of such balsams as copaiba and styrax state that only two modern authors, Litten and Vamossy, have recorded cases in which Peru balsam produced such a condition. The first reported the case of a painter suffering from lead colic, and from scabies, who passed blood, epithelium, and casts in his urine after each inunction with the medicine. In the four cases of the second writer, irritation of the kidney, with albuminuria and dark-colored urine, followed the employment of Peru-balsam gauze. In order to settle the point to their own satisfaction, the authors examined systematically the action of the balsam on the kidneys in 22 cases of different diseases, testing daily in each the color, odor, specific gravity, quantity, reaction, presence of albumin, and microscopical appearance of the urine. They indicate the results in tabular form. The balsam was given by the mouth, subcutaneously, and by hypodermic injection. The largest dose employed was 170 grains in one day. That the balsam was actually absorbed was proved by the strong acid reaction of the urine, due probably to an increased

amount of hippuric acid. Their results contradict entirely the statements of Nothnagel and Rossbach, that the drug given internally in large doses produces gastro-intestinal catarrh and acts as an irritant to all mucous membranes. In no instance did they observe any disturbance of the stomach or bowels nor any brown coloration of the urine, albuminuria, nor abnormality in the amount of urine secreted. It is clear that Peru balsam is not to be compared with copaiba and styrax in its action on mucous membranes and on the kidneys. This is probably due to the absence in it of ethereal oils. It is possible that the renal irritation witnessed in Vamossy's and Litten's cases was due to adulteration with ethereal oil. It is, therefore, very important to secure the purity of the preparation.

Cases of albuminuria occur without having at their foundation anything of a grave nature. The albumen in the urine, not infrequently accompanied by crystals of oxalate of lime, is the only phenomenon which can be recognized, as far as symptoms and physical signs go. Mental states, exercise, immersion of the body in cold water and the ingestion of food have been named as possible causes of this condition. In a considerable number of cases, too, intermittent or continuous albuminuria is present, without any cause whatever being discoverable, and without the development of any signs of Bright's disease. There is a very sharply defined form, viz., "cyclic albuminuria," which is characterized by the persistent occurrence of albumen in the urine at a fixed period in the day, while it is as uniformly absent at another time. On rising in the morning there is no albumen in the urine; in an hour or two it appears and increases in quantity for a while, then diminishes and disappears before the day is over. The ingestion of food or the employment of cold water bathing has no influence upon it; but if the recumbent position is maintained in bed during the day, the albuminuria does not appear. It is the upright position which is the factor in determining the escape of albumen in these cases.

Cyclic albuminuria must be carefully distinguished from the condition seen sometimes during recovery from acute nephritis, where rising from bed causes a reappearance of the albumen in the urine. The previous history of the case will aid us in distinguishing between them. The functional disorder appears to have no tendency to become organic; its treatment with drugs is unsatisfactory, and we must attend simply to the hygienic condition of the patient. A correct recognition of the disorder is the most important matter connected with it, and as aid in this respect the author would call attention to a condition of the urine, to which, however, he would not attribute too great diagnostic value. In structural renal disease, namely, it is rare to find any proteid substance in the urine which is precipitated by organic acids. In cyclic albuminuria, on the other hand, it is the rule that such a precipitate be produced. Two proteid substances are present in such cases, one of which is precipitated by the citric acid used in the first stage of the ferrocyanide test, and the other, the serum-albumen, on the addition of the potassium salt.

Although the infectious nature of acute articular rheumatism has not yet been demonstrated, such an etiology is highly probable from the point of view of modern general pathology. In favor of such a causation are the acute febrile course, the local involvement of the joints, and the tendency to complication by endocarditis and inflammation of serous membranes. Sahli reports the case of a girl, sixteen years old, with a second attack of acute articular rheumatism, complicated by endocarditis, pericarditis, bilateral pleurisy, and finally, left-sided pneumonia, death suddenly taking place with cyanosis, perspiration, and heart-failure. At the post-mortem examination vegetations were found not only upon the leaflets of the mitral valves but also upon the aortic semilunar segments and upon the lateral leaflet of the tricuspid valve; the pulmonary leaflets were free. Inoculations were made up of agar and gelatin from the endocarditic excrescences, from the enlarged bronchial glands, the synovial membrane and the contents of an affected knee-joint, the thickened pericardium, the inflamed pleura, and from the heart. In almost all instances pure cultures of a single organism developed, which corresponded in all essential characters with the staphylococcus pyogenes citreus. Animal inoculations yielded negative results. The conclusion is expressed that the organism found is to be looked upon as the cause of the disease. It remains to be determined whether this organism is a distinct one or a modified form of the staphylococcus pyogenes citreus. It seems possible (and the possibility is supported by evidence) that acute articular rheumatism may be caused by attenuated pyogenic cocci, and future investigation must determine whether a single or several species of organisms have an etiologic relation to the disease. The bacteriologic examination in the case reported indicates that the so-called complications of acute articular rheumatism (endocarditis, pericarditis, pleuritis) were etiologically related to the primary disease, of which they were thus not complications but merely localizations. In numerous other cases of acute rheumatism subsequently examined, staphylococci were also found in the contents of affected joints and in the blood.

Courtois-Suffit has made a study of the subject of purulent pleurisy, and presents certain facts of practical importance. Bacteriological research has revealed the existence of several varieties of purulent pleurisy, the etiology, symptoms, course, prognosis, and treatment of which differ with the active infectious agent. Three main groups may be recognized; (1) pleurisy due to the pneumonia-coccus of Frankel, (2) that due to the bacillus tuberculosis. In addition, there may be the following mixed forms: (1) Pleurisy due to pneumonia-cocci and streptococci; (2) that due to streptococci and staphylococci; (3) that due to the bacilli of tuberculosis and streptococci; 4, putrid and gangrenous empyemata, caused by the microbes of suppuration association with certain saprogenic organisms. There are, besides, rare forms of purulent pleurisy due to the bacillus of Friedlander, to the staphylococcus pyogenes, and to the bacillus of Eberth. In the pleurisy due to pneumonia-cocci—metapneumonic pleurisy—the pus is thick, greenish, creamy, without odor; the pleura is covered with false membrane, shreds of which may float in the effusion; the pleurisy has a tendency to become encysted; it often terminates in a vomica, and rarely becomes chronic; it may be primary, associated or not with other pathological conditions due to the pneumonia-coccus, in which case its onset is sudden; or it may appear insidiously in the course of a pneumonia or suddenly during defervescence; the temperature is that of a continued fever, without oscillations or irregularities; the effusion is copious in the acute primary form, moderate in the latent; the pleurisy terminates by absorption or by the formation of an encysted vomica; the prognosis is favorable, the mortality does not exceed five or ten per cent.; in this form, especially, is simple puncture justifiable. Purulent pleurisy due to streptococci may develop in the course of a constitutional affection caused by the same organisms as puerperal fever; in connection with other pathological con-

ditions arising from infection by streptococci, as broncho-pneumonia and peritonitis, and secondarily to remote affections, as an otitis or a phlegmon; the pus is thin, yellowish, without odor, flocculent, and shows no tendency to become encysted. Occurring in the course of another affection the pleurisy is latent and insidious; appearing at the termination it may be acute, frank, and painful; its evolution is lower than in the case of pleurisy due to pneumonia-cocci; the temperature is that of suppuration due to streptococci, with decided remissions and exacerbations; the effusion, usually moderate in degree, never yields to simple puncture, it shows no tendency to absorption or spontaneous evacuation, and only exceptionally gives rise to vomicæ; death may occur from septicemia or purulent infection; the duration is long; the mortality about twenty-five per cent.; early and radical operative interference is necessary. The bacillus tuberculosis alone may occasion a purulent pleurisy, comparable to a cold abscess; the pus is thin, yellowish, opaque, without odor and flakes of fibrin, the pleura is thickened by many layers of superimposed plastic exudate, containing tuberculous nodules; the pleurisy may set in frankly and acutely, or may be insidious and latent, the patient sometimes remaining unconscious of the presence of the effusion, though this be abundant; during the active stage the general health may be preserved, febrile reaction may be absent, and the fluid slowly but persistently reaccumulates; a fatal result occurs sooner or later, according to the course of the pulmonary disease, repeated puncture is necessary. In the purulent pleurisies due to mixed infection the condition assumes the gravity occasioned by the most virulent microbe. The association of streptococci and staphylococci gives rise to a pleurisy of grave type, insidious onset, irregular course, with the signs of pyemia and wide range of temperature; early and energetic treatment by means of incision and lavage is required. Pleurisy from streptococci may be a complication of pulmonary tuberculosis; although curable, it may prove a serious complication, necessitating, perhaps, the operation for empyema. The pleurisy occasioned by the microbes of suppuration is especially grave when pulmonary cavities exist; the prognosis is then almost fatal. The putrid and gangrenous pleurisy rapidly gives rise to the grave general manifestations of sapremia, it necessitates speedy and energetic intervention.

Mental shock should be calmed by a cheerful word and personal presence. The anesthesia should be of short duration; it should not be begun until everything is ready, and it should be discontinued early, keeping in mind the fact that consciousness returns tardily. The operation and the dressing should occupy no more time than is necessary. Throughout all care should be taken that the patient is not chilled. To promote the reaction after the operation, persistent and carefully applied dry heat should be employed, with especial care to avoid accidental burns. Liquid nourishment, with a stimulant and a little laudanum by enema; aromatic spirits of ammonia, black coffee, and brandy by the mouth, quiet, and a horizontal or more than horizontal position and sleep are also serviceable. The physiology of this condition is failure of the circulation, as shown by the great loss in force of the pulse, diminished arterial pressure, and extraordinary fall of the bodily temperature. Further, that vaso-motor paralysis is the chief cause of heart failure and of the above conditions. Upon this theory the two chief indications for the treatment of the shock are to overcome the vaso-motor paralysis and to maintain the bodily heat. Stimulation of the heart is, of course, useful, but such stimulation will amount to very little if there be no reawakening of the resistance to the heart's action; and if such resistance be aroused in any individual case, it is almost certain that it in turn will reexcite the heart. Regarding nourishment in severe shock, when the life-force is at such a low ebb that respiration and circulation can scarcely be maintained, digestion must be in great part, if not altogether, arrested. Certain substances which are stimulants rather than foods, as beef essence, highly seasoned and given hot might very well achieve good, in an injured person, at a time when, even as simple a food as milk would not be helpful, but be actually injurious.

The ordinary methods of raising the bodily temperature by bottles of hot water, hot bricks, etc., placed in the bed are feeble, compared with a hot-water bath. In hospital cases the very best treatment of shock following an injury may even be to put the patient for a time in a bath of water whose temperature is 110° F. Another method of keeping up the bodily temperature, which is free from objections of hot water, and is almost as powerful as that procedure, is the use of the hot-water bed. If an ordinary water-bed be three-fourths filled with water whose temperature is 130° to 140° and blankets spread over it, and the patient laid thereon, the body will sink down so that it will be almost surrounded by the heated mass. If the bed be well covered with blankets, many hours will be required for the cooling of the water.

The choice of anesthetics is a matter of great importance. Ether is as truly a stimulant to the circulation as is alcohol, and merely for the purpose of stimulating a patient in shock it is more rational to give ether than to give alcohol, because the action of the ether is quick and more controllable than is the action of alcohol; on the other hand, precisely as alcohol in excess becomes depressant to the heart and circulation, so also does ether; chloroform, however, is, under all circumstances, a depressant.

As regards the use of alcohol in the cardiac accidents of anesthesia, it should not be forgotten that ether and alcohol have almost the same action, save only that ether is absorbent and eliminated with greater rapidity. When the circulation fails during anesthesia, it is just as sensible to exhibit more ether as to exhibit alcohol.

In atropine we have a drug which will stimulate the vaso-motor system; the dose of its salts is small and their diffusibility is great when injected hypodermatically. Ergot is also a powerful vaso-motor stimulant; its action, when given by the mouth, is too slow for the necessities of such cases, and its hypodermatic injection is prone to cause severe local irritation. Digitalis is strongly indicated in shock, not only on account of its power over the heart, but because it appears to be a powerful stimulant to the vaso-motor system. In the form of the tincture it may be given hypodermatically with little danger of producing severe local irritation, and with the hope that it may be sufficiently quick in its influence to be of some good; but its action is exceedingly slow compared with the almost instantaneous activity of atropine. Ammonia administered by the mouth may sometimes be of some service; injected into a vein it would have an immediate but temporary effect.

Atropine might also be used to avoid shock by giving it at the beginning of anesthesia, thereby dulling the vagus, and thus to some extent shielding the heart from shock transmitted through the nerve, as well as to produce the good effect of the atropine upon the vaso-motor system. Some preparation of strophanthus might be used instead of the tincture of digitalis, as it would probably be more prompt in its action.

For the hypodermic injection of ether there are two generally organized methods: It may be injected subcutaneously into the cellular tissue immediately under the skin, or it may be injected deeply into the belly of the muscle. By the former plan a little emphysema may be produced by the rapid volatilization of the ether. If we inject deeply into a muscle, there is no pain, but there is risk of a deep-seated abscess forming. As ether is a good antiseptic the risk of this latter accident is small.

David Wallace in reporting upon this subject, reports two cases in which injections of ether were used to treat sudden or threatened collapse; in each case twenty minims of sulphuric ether were injected deeply into the extensor group of muscles of the forearm supplied by the posterior interosseous nerve.

In one of these cases the patient had not fully regained the use of the hand after nine weeks.

In the other case the patient was too ill for a week to have any attempt made to treat the paralysis; after this blisters, massage, and galvanism were used. The muscles supplied by the posterior interosseous were not only paralyzed but markedly atrophied. After three weeks' treatment the wasted muscles were found to have greatly increased in bulk and firmness. Eight weeks from the date of the paralysis, and after four weeks of galvanism, the middle and ring fingers could be voluntarily extended, and a week later the little finger could be extended, while slight abduction of the thumb was got by the action of the extensor ossis metacarpi pollicis, and extensor secundi internodii pollicis.

It is improbable that the nerve-trunk of the posterior interosseous was pierced by the needle, and the ether injected directly into the nerve, as normally the nerve-trunk would be situated about three inches above the point where the needle was introduced. The ether used was tested and found to be a good preparation. The explanation would rather seem to be that the ether after injection would diffuse most rapidly through the intermuscular spaces, and as it is in these that the nerve-branches chiefly lie, the ether coming into contact with these branches would cause coagulation and destruction of the constituents of the nerves, and in that way destroy their destructive power. The immediate local effect would probably be followed by some degeneration of the nerve going to a higher level, while neuritis would be set up as indicated by the patient during the first three or four weeks of the paralysis.

Such cases as the above are rare, but there seems to be no doubt that paralysis may be caused by the injection of ether deeply into the muscles, that the prognosis is favorable though recovery may be long delayed, and that galvanism hastens the cure.

—A new journal has recently been founded in Japan under the title of the *Japanese Journal for Dermatology and Urology*. The original articles, according to the *Journal of the American Medical Association*, will appear in German, the abstracts in Japanese. The first number contains an article by Dohi on leprosy, which states that the nervous form is much more common there than the nodular form. He treats the latter with a mixture of ol. gynocardia and ol. oliv. ana, while he finds injections of a one- or two-per-cent. solution of sublimate the best treatment for the nervous form, giving continuously, with intermissions. The statement is made in this periodical that the proportion of cases of venereal disease in the Japanese army fell from 70.2 per cent. to 55 per cent. in the last three years of the century.

VOICE PRODUCTION FROM A LARYNGOLOGIST'S POINT OF VIEW.

BY J. MOUNT BLEYER, F.R.A.M.S., LL.D., NEW YORK.

My unique position to the most famous singing artists of Metropolitan opera for the last fifteen years, gives me the right of a critic on vocal production. *The Musical Courier*, which holds the first rank on matters of music and singing, paid me the compliment of asking my opinion on the singing art in their last issue, to which I made the following reply, with these important points. That these remarks may prove of service to others who follow laryngology as a speciality, I am prompted to publish them in THE MEDICAL TIMES, whose circulation and standing warrants my doing so.

The organ of speech and singing is the same in both cases, but in song it is used strictly as a musical instrument—and, too, of far more complex structure than any fashioned by the hand of man.

No two persons have their laryngeal muscles arranged in precisely the same manner, a circumstance which of itself goes a considerable way toward explaining the almost infinite variety of human voices. The wonderful diversity of expression in faces, which structurally, as we may say, are almost identical, is due to minute differences in the arrangement of the little muscles which move the skin. The same thing holds good in the larynx. In addition to this there are more appreciable differences, such as we see in the other parts of the body. The larynx (or voice-producing organ) itself is as various in size and shape as the nose, and this is still more the case with the other parts concerned in the production of the voice. The most laborious anatomical Gradgrind would shrink appalled from the attempt to measure the capacity and trace the shape of the various resonance chambers—chest, throat, mouth, and nose, with the many intricate little passages and cave-like spaces communicating with the latter—yet the slightest difference in the form, size, or material structure of any of these parts must have its effect in modifying the voice to some extent.

It is a curious fact that singers, who are often rather unwilling to believe that the voice is formed solely in the larynx, are yet generally surprised to be told that the true nature of the voice can not be certainly determined by examination solely of that organ itself.

A funny story is told on that point of a famous Viennese laryngologist, Prof. S., early in the sixties. Of course, in those times laryngology was only in its infancy; however, it holds good to-day. It illustrates how very hasty it would be to judge or to venture to even guess as to the character of a voice from the appearances of the larynx and vocal cords, and it may be best stated by the following anecdote:

To Prof. S., who had asserted that he could, by a laryngoscopic examination alone classify the voice, came one day two men to have their throats examined.

One—the stalwart tenor, Theodore Wachtel, was promptly declared a baritone; the other, the excellent baritone, J. N. Beck, of small stature and corresponding throat, was pronounced a tenor. Tableau.

From what is said as to the extraordinary number of the component parts of the vocal machine, it will be evident that it would be almost as rash to decide upon the character of the voice from the appearance of the larynx, as it would be to take the shape of the nose as an index of moral character. It can only be said in a general way that, other things (notably, the resonance chambers) being equal, one expects a large, roomy larynx, with thick, powerful cords, to yield a deep, massive voice, and a small organ, with slender cords, to send

forth a shrill, high-pitched voice. These two types represent the male and female voice, respectively; that of the child belongs to the latter category. It must be understood that the difference in size between the largest larynx and the smallest is, after all, very trifling in itself. For instance, the vocal cords in women are but a fraction of an inch shorter than in men, and the other dimensions vary in much the same proportion. A like difference prevails throughout the resonant apparatus, the re-enforcing chambers being larger in men, and their walls (which are built up of bone, gristle and muscle) denser or more solid.

The voice varies in compass no less than in quality, *a priori*, long cords should indicate great range of tone, but so much depends on the management of these vibrating reeds, that comparatively little significance can be attached to mere length. The average compass of the singing voice is from two to three octaves, the latter limit being seldom exceeded. The artistic effect produced with this small stock of available notes is as wonderful in its way as the marvelous results that can be got out of the twenty-six letters of the alphabet.

The subject of the registers has been much debated by the learned, and still more, perhaps, by the unlearned, I can touch only very lightly on the subject here. To sum up the mechanism of the registers, there is first the "long reed" register, in which the cords vibrate in their whole length and thickness; then the "short reed" or "head" register, in which the vibrating reed is gradually shortened. Pitch rises in the long reed register, owing to increasing tension of the cords, accompanied by increasing rapidity of vibration; when the cords cannot be made more tense, the device of shortening the reed is brought into play. In the upper register not only is the aperture between the cords ("glottis") diminished to the smallest possible size, but the whole upper orifice of the larynx is compressed from side to side, so as to leave only a very narrow chink for the voice to pass through. In the lower register, on the other hand, the larynx is wide open, and the vibrating air rushes forth in a full broad stream of sound. Many singing masters and artists themselves, not content with the great natural divisions of the voice which have just been indicated, insist that there are five different registers, each with a distinct mechanism of its own. I am not a *maestro*, and therefore I am willing to admit that artistically speaking, there *ought* to be five registers, or, in fact, any number of them that may be thought desirable. But if that is a necessity of art, it is not a necessity of nature. The differences of mechanism on which the singing masters profess to base their divisions are mostly of so subtle a nature as to be almost invisible to the eye, and sometimes even hardly appreciable by the ordinary intellect. I think, however, there is a way of reconciling their views with mine, diametrically opposed as they at first seem to be. As a physiologist, I speak solely of the tone of a note, that is to say, of its place in the musical scale, and I say, that note is delivered by the long reed or short reed adjustment as the case may be; as musicians, on the other hand, the *Maestri*, speaking of the quality as well as the tone say: "That note ought to be delivered in such and such a way to make it artistically beautiful. In the one case, in short, the voice is considered purely as it is produced in the larynx; in the other, as it is delivered by a well-trained singer managing his resonance apparatus to the best advantage. Now, for this result many things are needed besides the correct adjustment of the vocal cords. The supply of breath must be regulated to a nicety, and the position of the tongue, soft palate, cheeks, and lips must be precisely that which is best for the utterance of each particular note. There are rules founded on experience which govern all these things; these rules are expressed in terms of subjective sensations useful, as indicating the feelings that should accompany the right performance of the maneuver required. It is on all this complicated mechanism that the five registers of the singing masters are based; the more or less fanciful changes in the larynx, to which they attribute the slight but artistically vital differences in production which their trained ear enables them to appreciate, have in reality but little share in the result. The difference between artistic and inartistic production of the voice depends far more on the management of the resonators than on the adjustment of the vocal cords.

This point will be better understood if it is borne in mind that, as Helmholtz has shown, every musical sound is "compounded of many simples;" that is to say, the fundamental tone is reinforced by a number of secondary sounds or "harmonics" which accompany, and, as it were, echo it in a higher key, the whole being blended into one sensation to the ear. Then again, it is well known that every resonance cavity has what may be called an "elective affinity" for any particular note, to the vibrations of which it responds sympathetically, like a lover's heart answering that of his beloved. As the crude note issues from the larynx, the mouth, tongue, and soft palate mold themselves by the most delicate movements into every conceivable variety of shape, clothing the raw bones of sound with body and living richness of tone. Each of the various resonance chambers reechoes its corresponding tone, so that a single well-delivered note is in reality a full choir of harmonious sounds.

It has further been proved that each vowel has its own special pitch, and hence it can not be sounded in perfection on any other. The different vowels, in fact, are produced by modifications in the length and shape of the cavity of the mouth, and the note of each one of them is that to which such a resonance chamber naturally responds. It follows from this that, in order to get the best effect from the vocal instrument, there should be the most perfect possible adaptation of the various vowels to the notes in which they are to be sung. Sounds like "o" and "ou" ("oo") are best rendered in the lowest notes of the voice; "a" and "i" ("ee") in the upper. It is difficult, indeed almost impossible, to sing the latter vowels on deep notes. "The marriage of music to immortal verse can not be perfect unless the various affinities of the vowel sounds are carefully respected by the composer."—*Sir Morell Mackenzie.*

From what I have said it will, I think, be evident that no one, however happily gifted in point of voice, can use his endowment to the best advantage without careful training. Every note requires for its artistic production, not only a particular adjustment of the larynx, but a special arrangement of the resonators and suitable management of the breath, all the complicated movements involved in these various proceedings having to be performed automatically and with the most exact precision, and the whole being combined into one instantaneous act. M. Jaurdains' master was not such a fool as he is made to appear, when he insisted on the mechanism of utterances being clearly understood. When this has been acquired, the singer is still only like a child that has learned to stand; walking, running, and dancing; in other words, the junction of the separate notes into the linked "sweetness" of an air, the graces and ornaments of vocalization, and the secret of sympathetic expression have yet to be acquired. There is an unfortunate ten-

dency at the present day to be satisfied with a very inadequate amount of training, and I can not help thinking that this is partly due to an imperfect appreciation of its necessity. Many seem to fancy that the voice can be trained in a few months. Mlle. Bauermeister, in speaking to me on this very point, said: "How preposterous such a notion is, must be evident to any one who takes the trouble to think about the matter. In the case of the violin or piano the instrument is perfect from the outset, and the student has only to learn to play it; the singer, on the other hand, has to develop—in some cases almost to create—his instrument, and then to master the technique of it."

The art of so governing the breath that not a particle of it shall escape without giving up its mechanical equivalent of sound must first of all be acquired. The first thing the singer has to do is to learn to breathe; he must fill his lungs without gasping, and empty them quickly or slowly, gently or with violence, according to his needs. Much has been written on this matter with which I need not perplex the reader further.

The training of the other parts of the vocal machinery, the vibrating element and the resonant apparatus, lies altogether ontside of my province, which I beg to leave with the singing masters. What may be called the "fingering" of the vocal cords and the "tuning" of the resonators can be acquired only by constant practice under a good teacher. There is no such thing as a self-taught singer. Constant imitations of the best models and the watchful discipline of an experienced instructor constitute the real search of the old Italian schools of singing, which gave such splendid results.

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TREATMENT OF NERVOUS CONDITIONS.

BY C. WILLIAMS, M.D.

IN the treatment of drug habits, it is important in that period beginning with the time when the symptoms caused by the withdrawal of morphia or cocaine begin to disappear, to watch the case carefully after complete recovery has apparently taken place. Were more attention given to the patient during this stage of apparent health, fewer relapses would take place. It is very necessary to impress on the patient the dreadful consequences of a relapse into the old habits, and in like manner to teach him that permanent cure must be through the exercise of his own will. It is a notable fact, too, that when several persons, under treatment for the morphia habit, are together in an institution for the cure of these patients, they are very apt to associate with one another, to talk freely of their affection, and often to combine to deceive the physician in charge. This association is to be carefully avoided, for there is nothing more ruinous to the recovery of the lost will-power, than to allow the thoughts of conversation to run on the subject of morphia. The whole therapy of the convalescence shortly after the withdrawal of morphia or cocaine may be summed up in careful oversight of the patient, strict avoidance of alcohol in an institution for the purpose, and the avoidance of all unpleasant psychic impressions. While in the institution no friends or relatives should be allowed to stay with the patient, since they are under the entire control of the director.

When, however, the patient leaves, after six or eight weeks a desire for occupation should be encouraged under the constant supervision and presence of a near relative, an intimate friend, or a physician. This supervision should be both by day and night, and should last at least a year.

(1) Procursive epilepsy is a form of disease in which the attack is manifested by an impulsive running forward, accompanied generally by a fit, with loss of consciousness, but rarely by aura. (2) This form of epilepsy is peculiar to childhood and youth. (3) It may last several years before being transformed into the ordinary form of epilepsy. During the transformation it may assume sometimes one form, and sometimes the other, but sooner or later, and sometimes suddenly, the change is accomplished. (4) It is impossible to localize accurately the anatomical seat of this form of infantile *haut mal.* There is certainly nothing to authorize the supposition that a lesion of the cerebellum may be the organic cause of precursive epilepsy. (4) The disease seems to develop preferably in those individuals who present a coarse lesion of the encephalon. It is probable, however, that, like all other forms of the disorder, it may manifest itself without appreciable organic lesion of the nervous centers. (6) Procursive epilepsy is frequently complicated by moral insanity.

The tendency to hysteria may remain latent, as it were, until it becomes active through the influence of some general infection or toxemia, as syphilis or alcohol. Lead-poisoning is a potent cause of hysterical manifestation. Severe headache in a syphilitic subject, associated with hyperesthesia of the scalp, is usually of hysterical rather than of specific origin, and is not controlled by antisyphilitic treatment. It may be in these cases that a specific cephalalgia really existed and was cured, the hysterical symptoms persisting.

Although salol has been very freely used, both among children and among adults, and although it has come to be regarded as one of the least dangerous of the new remedies having antiseptic and antithermic properties, there are not wanting clinical testimonials which tend to show that, under certain circumstances at least, its use may be attended with a fatal result. Two cases of fatal result attending its use have been reported, one in which a 15-grain dose of salol was used. In this latter case the patient was suffering from severe gastric symptoms, and was under examination according to Ewald's method. After taking the dose the patient became restless and unconscious, the pupils were dilated, the pulse was irregular, there was constant vomiting, and the urine became dark and contained salicylic acid. Death occurred 12 days later. At the autopsy there were found gastritis and hemorrhagic enteritis, a gastric ulcer cicatrized at the cardiac end, chronic endometritis, and cyst of the ovary. No doubt was entertained that the salol had been the cause of the symptoms of poisoning.

H. E. Counsell has reported a case of Addison's disease in a man aged twenty-seven years, of good family history, formerly intemperate, and impotent for two years. He suffered at first with symptoms of gastric indigestion, later growing worse, and attended by feelings of depression. There was progressive loss of weight and strength, shortness of breath, a slight yellow tinge of the skin, vomiting, pain and tenderness in the abdomen, rapid and feeble pulse, dizziness on sitting up, and diminution of the hepatic dulness. Still later the mind became cloudy; vomiting of a blackish material was almost constant, collapse developed, and the patient died. At no time was there any bronzing of the skin.

At the autopsy, one of the suprarenal capsules (the other was probably of the same nature, though this is not directly stated) weighed one and a half drachms, was larger than normal with bossy surface, and contained in its substance large white deposits, varying in size from that of a pea to that of a cobnut. These masses were almost entirely caseous and did not stain

well. No tubercle bacilli could be found in them, though the writer considers them undoubtedly of a tubercular nature.

Adams of Glasgow, reports two cases. The first within six weeks lost the slowness of thought, speech, and movement, and was able to knit easily, though not able to do heavy work. The myxedema and feeling of cold disappeared, and she became active and buoyant. Menstruation did not return, but there was a profuse growth of hair. In the second case the edema of the eyelids disappeared within the first week, the backache was gone, and she could easily climb stairs within a month. The method adopted was to mince fresh thyroid and administer it in a sandwich of bread and butter flavored with pepper. The eighth of an ordinary sheep's thyroid, thrice weekly, seems enough, at least, to begin with, for great difficulty was found in getting the patients to continue the treatment during the first fortnight owing to unpleasant symptoms, probably due to too large a dose, though perhaps partly owing to rapid elimination of accumulated waste products. It is evident that the treatment must be kept up, for an intermission is likely to be followed by a return of the symptoms.

Speech defects of different kinds result from lesions in very different parts of the brain. While words are the vehicles of intellectual expression, the memory for words is fourfold, the four forms of verbal memory being registered in different parts of the cerebral hemispheres, the several centers being connected by commissures, and being called into activity by different combinations, according as we are listening, reading, writing, or speaking. The four forms of verbal memory are these: (1) The auditory memories of words, which, we may say, are registered in the posterior part of the upper temporal convolution; (2) The visual memories of words, registered in some unknown part of the occipital lobe; (3) The glosso-kinesthetic memories of words, or the memories of our articulatory sensations, which he believes to be located in the posterior part of the third frontal convolution; (4) The cheiro-kinesthetic memories of words, or those of the sensation connected with writing movements, which he believes to be registered in the hinder part of the second frontal convolution. These two last centers are the sites from which, in writing and speaking respectively, volitional incitations issue through descending internuncial fibers, as to arouse in appropriate modes the true motor centers situated in the medulla and spinal cord. The action of these last, as of all motor centers, is entirely devoid of all sensory accompaniments—that is to say, whilst movements are invariably preceded and incited by processes taking place in sensory nerve elements, and whilst the excitation of the movements invariably gives rise to a body of ingoing impressions (kinesthetic) emanating from muscles, skin, joints, etc., the actual nerve processes excited in the motor centers proper are devoid of any conscious accompaniment, and are wholly incapable of independent memorial recall. "Motor centers proper" are commonly called lower motor centers. "Kinesthetic centers" is the term for the cortical motor centers, since he is of the opinion that no motor centers exist in the cerebral cortex. In cortical motor centers sensory results from different movements are registered. The reexcitation of these centers constitutes the necessary antecedent—the veritable stimulus—for the production of the movements to which they are related. The excitation of these parts of the cortex constitutes, in fact, the terminal part of a voluntary act, so far as it had to do with the cortex. The precise mode of ideally-revived activity here and in other sensory centers gives rise to correspondingly precise stimuli, which, passing downward to the true motor centers, constitutes the volitional incitations for the desired movement. The activities of these different word-centers are almost never called into play singly; for the most part, two or three of them are roused through commissural fibers almost simultaneously, though really in rapid succession. Thus, we think in words, whether the result is to be silent thought, speech, or writing. In the first case the activity is mainly in the auditory center, though diffused to some extent in two directions —that is, toward the glosso-kinesthetic and the visual word center. If the thought is to issue in speech the stimulus in the former direction is much the more powerful, and the conjoined activity of the two centers suffices to rouse the motor centers for speech.

If, on the other hand, the thought is to issue in writing, the activity of the auditory center is immediately followed by a powerful action in the visual word-center and this again by activity in the cheiro-kinesthetic word-center, whence volitional stimuli issue for the production of writing movements. There appears always to be a prior activity in the visual or auditory word-centers, before the two kinesthetic centers are called into activity. In the examination of all cases of speech-defect we have to test in a systematic manner the integrity of these different word-centers, of the commissures which unite them, of the internuncial fibers issuing from the cortex and of the true motor centers in the bulb. (*a*) If the patient understands what is said to him, and can repeat words which he has just heard pronounced, it shows that the auditory and glosso-kinesthetic centers, with the commissure between them, as well as the outgoing channels and the corresponding motor centers, are free from serious damage; (*b*) If the patient can understand written speech, and can copy a word which has been written before him, it shows that the visual and cheiro-kinesthetic centers, with the commissure between them, as well as the outgoing channels and the corresponding motor centers, are free from serious damage; (*c*) If the patient can read aloud or name objects at sight, it shows that the visuo-auditory commissure must be intact; (*d*) If the patient can write from dictation, it shows that the audito-visual commissure must be undamaged. Many doubt the existence of any "center for conception of ideas." They believe that the supposed necessity for assuming the existence of any such center may be obviated by a fuller recognition of the different degrees of excitability of the auditory word-center, and by the fact that when its excitability is lowered to different degrees, very different kinds of speech-defect are produced.

Thus, where there is slight lowering of the functional activity of the auditory center we have a slight amnesia, with forgetfulness of names of persons and things; where the defect is graver, the power of spontaneous speech may be nearly obliterated, though imitative speech may be retained and the patient be able to read aloud frequently—*i.e.*, the auditory center is only capable of reacting on receipt of a strong external stimulus, or of one coming to it from the visual word-center; whilst, finally, if the auditory word-center is entirely destroyed, there is entire word-deafness with complete aphasia. Bastian reports a case in which there was lowered excitability of the auditory word-center, preventing any other than the smallest amount of spontaneous speech, together with some aphemic difficulty in the mere utterance of words; though the main and most interesting defect was due to lesion severing the two commissures between the auditory visual word-centers. The patient could, namely, understand per-

fectly all that was said to him, or all that he read, but could neither write nor speak spontaneously, except to a very limited extent. He could, however, repeat words spoken to him, or copy those written. Moreover, (1) he could not name at sight or read aloud a single letter, nor (2) could he write a single letter from dictation. These two symptoms show that the two commissures between the visual and auditory word-centers had been damaged in some part of their course. Finally, the author defines the various forms of speech defects. In aphemia the patient can write freely. The condition may be incomplete, and then the utterance is more or less blurred or indistinct; or it may be complete, and then he is absolutely dumb. Here the lesion is not of the cortex, but of some part of the internuncial fibers as they pass downward from the third frontal convolution to the motor centers of the bulb. In aphasia the power of speech and writing are generally nearly lost, and there is usually some interference with thought.

As regards the seat of the lesion in simple aphasia, he claims that the localization of Broca is clearly inadequate, and that there is absolutely no clinical difference between the aphasia produced by a lesion in the posterior part of the third frontal convolution and that which may be produced by a lesion in any part of the commissure connecting it with the auditory word-center. Where a destructive lesion involves the auditory word-center there is word-deafness with aphasia. Such a patient's mental condition is profoundly altered; he can neither speak nor understand speech, and, since words are first and principally revived in the auditory word-center, thought in words is no longer possible; and since the revival of words in the visual center could not be reinforced by their revival in the auditory center, the comprehension or use of printed or written words no longer exists. In commissural amnesia the commissures are damaged between the auditory and visual word-centers, and the patient is consequently no longer able to name and read at sight, or to write from dictation. A lesion in the visual word-center gives rise to word-blindness with agraphia. The patient may be quite unable to understand either printed or written language, but can comprehend spoken language, and can both think and speak. In agraphia the patient can speak and read, but cannot write. There is little or no interference with thought. The lesion is one of the cheiro-kinesthetic center situated in the posterior extremity of the second left frontal convolution, but a damage to any part of the commissure connecting this with the visual word-center would produce exactly the same defect, since the stimulus must pass from the latter to the former center. Do not continue the division of aphasia into "motor" and "sensory." The defects are in all cases in the sensory centers, or in the commissures between them; excepting in the case of aphemia, where, as stated, it is in the internuncial fibers passing from the third frontal convolution to the motor centers in the bulb. The fact that a paralytic disability is produced does not in any way prove that it is not due to a defect in a sensory center, or in a commissure between two such centers; it is here, in fact, that we have to look for the sources of the volition.

The symptoms of sea-sickness are those of cerebral anemia, as a result of deranged and diminished reflex muscular tonicity of which the loss of equilibrium is a sign. The treatment is directed to the digestive system, having one important object in view—to diminish the irritability of the sensory nerve-endings of the mucous lining of the alimentary canal by keeping the digestive tube functionally active and clean. This is accomplished by laxatives, limitation of sweets and starches, and the use of lean meats. During the first 48 hours on shipboard the patient is to rest in bed and sleep if possible, four light meals to be taken each day, and very little fluid drunk, a single cup of hot water with each meal. At the expiration of this period, the time, except that regularly given to sleep, should be spent in the open air, and the sensory vertigo supplanted by purposive movements as walking and by mental occupation or diversion. An efficient treatment is that of bromide of sodium, which should be pushed to its physiological effects and its influence continued during the voyage. During the attack, if hyperemia be present, the vertical position, a hot foot-bath, ice to the head or spine, possibly caffeine, antipyrine, or bromide of soda. If anema, atropine with nitro-glycerine, sometimes strychnine, and natro-benzoate of caffeine or ergotin may be useful. The horizontal position, whisky (and food also) by the rectum, copious draughts of hot water, are advised. Frequently repeated and small doses of creosote, with lime-water and an infinitesimal quantity of ipecac, or exalate of cerium in hourly five-grain doses, may be effectual in relieving vomiting. If these preventive precautions and remedies fail, the patient must content himself until he can again get into his element—the place where he was created and educated to live—on land.

The following features of peripheral neuritis in typhoid fever are usually prominent and throw much light on the situation and nature of the lesion:

1. The paralysis is usually partial in extent and degree. It may affect the whole of both lower limbs, or one limb, either upper or lower; but, as a rule, it is limited to certain muscles or groups of muscles, and often is strictly confined to the territory of a particular nerve.

2. The muscles are wasted as well as weak, and when tested with electricity show the partial or complete reaction of degeneration. In a few cases contractures of muscles are mentioned, but it is to be observed that they were found not in a well-nourished, more or less rigid limb, but in one where some at least of the muscles were distinctly atrophied.

3. The paralysis is almost invariably preceded or accompanied by some form of sensory disturbance. Thus the patient suffers from intense pain, continuous, remittent, fixed or radiating, or he complains of numbness and tingling in the extremity, which subsequently becomes paralyzed. Anesthesia, partial or complete, is of frequent occurrence, and, like the paralysis which it usually precedes, may be limited to the territory of a particular nerve.

4. During the course of typhoid fever, the knee-jerks, as pointed out by Angel Money, are commonly exaggerated, and there may be ankle clonus. Gowers refers to excessive knee-jerk and foot clonus in association with paraplegic weakness in patients seen some months after the fever and in the case of the man under my own care referred to above, there was exaggeration of the knee-jerks, together with paraplegic weakness and anesthesia. But, as a rule, judging from the reports in which the reflexes are mentioned, paralysis of the lower limbs is associated with diminution or loss of the knee-jerks.

The atrophic character of the paralysis testifies to a lesion in the lower segment of the motor tract. While probably in some of these cases the paralysis is the result of an anterior poliomyelitis, the presence of sensory disturbance in the vast majority of the cases shows that the lesion, if in the cord at all, is not limited to the anterior horns, or involves both roots or the peripheral nerves.

A consideration of the symptoms observed is strongly in favor of an affection of the peripheral nerves.

The nature of the neuritis—whether accidental or toxic is briefly considered.

Gowers' theory of local injury—from pressure or stretching of the affected nerve at a time when its nutrition is defective—may be a potent factor in some cases, but in others, according to the writer, evidence is not wanting which tends to show that the neuritis is due to a poison conveyed by means of the blood to the affected nerves, for, even where the chief functional disabilities are limited to one nerve territory, there are frequently slight indications of a more widely distributed disorder.

In addition to the above group of paralyses there are a few observations showing that occasionally an acute paralysis of rapidly ascending course, and frequently terminating fatally, may develop during the course of or immediately after typhoid fever.

"From a consideration of the preceding observations we are inclined to think that a multiple neuritis, initiated by the virus of typhoid fever, and frequently present in this disease, is not an unreasonable assumption. In one set of cases we may suppose that the action of the poison on the nerves is too slight to give rise to outward manifestations, or that these are masked by the general symptoms of the fever. In another set of cases the toxic influence on the nerves appears to be revealed by a series of irritative phenomena, such as neuralgic pains, cutaneous and muscular hyperesthesia, exaggerated reflexes, and cramps and contractures of various muscles; while in a third group of cases the presence of an atrophic paralysis, its distribution, progress, and associations leave little doubt on the mind of the observer that he has to deal with a genuine parenchymatous neuritis, and frequently with one of wide distribution throughout the body."

Berlin, of Stockholm, who was a member of Nordenskiold's expedition to Greenland, has given us a very complete account of snowblindness; he finds the first mention of it in Xenophon's "Anabasis." Snow-blindness naturally occurs principally in Arctic regions, as in Greenland, Canada, the Siberian coast, Spitzbergen, and the surrounding ocean. On the American continent it extends further south than elsewhere, except in high mountainous regions. It does not occur in Iceland, or in Norway and Sweden, with the exception, again, of isolated cases met with in the mountains. To judge from the protective measures taken by natives in Arctic regions, Esquimaux, and Siberians, it must be a common enough occurrence there. Whenever it occurs in Arctic or Alpine regions it only attacks those who are out in the open air. It begins to show itself soon after the sun first makes its appearance at the conclusion of the Arctic night. By far the greatest number of cases within the Arctic circle take place in the months of April and May. Berlin believes that in Alpine districts again it might occur at any time, while its greater frequency in spring and summer is to be ascribed to the fact that most Alpine climbing is done at those times. A great many Arctic travelers have noticed that the weather which seems most to favor the occurrence of snow-blindness is what is differently described by them as a peculiar kind of "thick," "heavy," "foggy," or "hazy" weather. Nothing seems, however, to be known as to the real nature of this weather. The temperature has generally been found to be below the freezing point.

The affection begins very much like cases of catarrhal conjunctivitis with a feeling as if sand or some foreign body were in the eye, and a desire to blink and shade the eyes. An examination at this period reveals nothing further than a slight hyperemia of the conjunctiva, increased lachrymation, and slight contraction of the pupils. This is succeeded by an aggravation of the symptoms leading to constant burning pain which radiates over the temples, etc. This gradually leads, too, to blepharospasms, and the patient has then to be led about. The objective appearances at this time are: increased hyperemia and chemosis of the conjunctiva, the chemosis being limited, however, to a narrow band surrounding the cornea and corresponding to the portion exposed when the eyes are open. Berlin has always found the cornea intact, but others (Envail and Gardner) have described cloudiness and even ulceration of the cornea. The ophthalmoscopic examination reveals nothing distinctly abnormal, and there is no real night or day blindness. Snow-blindness may come on very quickly, in a quarter of an hour even, as observed by Coppinger, the rapidity of onset depends on the degree of completeness of the precautions taken against it. In cases in which the eye has been properly shaded the affection is longer in developing and is less likely to be so severe. It lasts two or three days only, if the patient be treated indoors, but removal to the dark does not of itself in any way appear to soothe the suffering. All, even natives, are equally subject to it when the conditions are favorable to it. In a few cases only one eye has been affected. An interesting example of this is given: the case of a sergeant who was attacked in the right eye during an expedition from West to East, and some time afterward, and after complete recovery, was again attacked in the left eye whilst the expedition was moving from East to West. Eight other cases met with by the explorers are referred to which show that it is always the eye to the side of the sun which is affected when one alone suffers.

As to the nature of snow-blindness it has usually been supposed that it is a retinal affection caused by irritation from the excessive flare of the light reflected from the snow. This irritation is supposed to give rise to pain and photophobia, and to lead reflexly to irritation of the conjunctiva. Berlin observes, however, that there is absolutely no similarity between the conditions known to be produced by strong light and snow-blindness; there is no pain or photophobia, and no change in the anterior part of the eye, but diminished visual acuity and scotomata. He further points out that the freer the atmosphere is from water vapor the more powerfully is the solar radiation felt. This fact, first discussed by Saussere on ascending Mont Blanc in 1774, has been abundantly confirmed since by physicists. When in very cold regions, then the sun's rays are felt most burning. The members of Nordenskiold's Greenland expedition suffered considerably from sunburning. The exposed skin was frequently the seat of an exudative dermatitis. A similar condition is well known amongst Alpine climbers as "Schnecrose." Why should the eyes escape, then, an irritation which is so active in other exposed parts? is the reasoning to which Berlin leads up. He considers snow-blindness to be simply as, in his experience it has all the appearance of being, an erythematous conjunctivitis. Tables are given which show that it is most frequent at those times of the year when the solar radiation penetrates most strongly to the surface of the earth. It is mostly met with, too, in very dry regions, and is absent in Norway and Iceland, as he believes, on account of the influence of the Gulf Stream on the moisture of the atmosphere. It was shown by Jensen, in experiments on different animals, that less than 10 per cent. of the heat rays impinging on the eye penetrates to the retina, while 50 per cent., at least, are absorbed by the cornea. The cornea, therefore, receives the greatest burning, and this

may well account for the photophobia, as well as for the occasional ulceration referred to. The snow and ice hazes, which have also been found to cause snow-blindness, and the nature of which has never properly been explained, he considers to be cirri which have descended to the ground, and which produce their effect on the eye by simple mechanical irritation.

POINTS IN THE TREATMENT OF HEART DISEASE.

BY M. MCCRARY, M.D.

NITROGLYCERINE was introduced into medical literature as a remedy in neuralgia and nervous affections about thirty years ago, but it was not until about twenty years ago Murrell suggested it as a useful means for the relief of angina pectoris, having inhaled it accidentally while suffering himself from the disease. In the form of pills, perles, and triturates, it can be used as well as in the form of a one-per-cent. solution, which is least liable to change and the handiest to use, but care must be taken to keep the bottle tightly corked or by evaporation the strength may be increased with unfortunate results.

As one drop is a dose of the one-per-cent. solution it may be taken in water, given in this way: the physician drops ten drops into a tumbler, adding ten teaspoonfuls of water; one teaspoonful now representing one drop of the remedy. If the patient cannot swallow, being unconscious, one drop can be placed within the lower lip or upon the tongue; the drug may be given subcutaneously, but so rapid is its absorption through the mucous membrane of the mouth, that unless the syringe should happen to be filled at the moment it is doubtful if time is gained. Patients differ somewhat in the amount required to produce an effect: some requiring less than one drop, others requiring three or four drops to produce the same effect; the average dose, however, is one drop; again patients differ in the duration of the effect of the drug; usually the effect lasts three or four hours, but in a few cases the effect has ceased in twenty to thirty minutes. To avoid alarming people the less formidable names "gloovin" or "trinithin" may be used. When given by the stomach the effect is apparent in a few minutes, the pulse being increased from ten to twenty beats and becoming full and regular. In a few cases there is a slight headache, lasting for a few minutes.

In larger doses the face becomes flushed, a severe headache is experienced, accompanied with a feeling of fulness, singing in the ears, flashes before the eyes, and all the symptoms of an increased supply of blood to the brain. On account of this effect on the cerebral circulation, care should be taken in administering the remedy to the aged, as the sudden expansion of the cerebral vessels might cause a rupture of their weakened calcareous walls.

In case of a poisonous dose of nitroglycerine having been taken, we should select as antidotes such drugs as act in an opposite manner upon the vaso-motor nerves. Our object should be to cause contraction of the arterioles. The most desirable agents for this purpose are strychnine, ergot, and atropine. These agents should be given subcutaneously.

In comparing alcohol, ether, and nitroglycerine we find that in all three there is, first, a period of excitement, when the heart beats quicker and fuller, and the brain, from increased supply of blood, is more active. In all three this first stage or effect is followed by a second effect, a stage of unconsciousness. With ether this first stage is soon reached and passed, and the second stage—that of unconsciousness—is rapidly entered. With alcohol the first period is of longer duration, larger quantities of the drug and a greater length of time being required to pass from the first stage into that of the second stage.

Nitroglycerine, compared with the rapidity of action of the other two drugs, enters the first stage almost instantly, and the stage of unconsciousness only after a poisonous dose is taken. Nitroglycerine should be preferred to alcohol in every case of emergency, because it acts with greater rapidity, can be given during unconsciousness, one drop is equal to an ounce of brandy, and it cannot create or arouse a slumbering appetite for the drug.

Cases are reported in full of the use of this remedy in angina pectoris, faintness during a minor surgical operation, rapid prostration in typhoid fever, in opium poisoning, in uremic coma, in nephritis, benefit has been observed in chronic inflammation of the kidneys from the use of nitroglycerine. Its use is further suggested in persons apparently dead from drowning. In all such cases nitroglycerine would be of great benefit, heat to the body and the expansion of the chest not being neglected.

In view of the present discussion on the puncturing of the heart we find that puncture of one of the cardiac cavities in states of extreme dilatation was advocated and practised by Westbrook, in 1882, while Roberts and Leuf have urged the adoption of the method in suitable cases, and it has now been performed, accidentally or by design, in a number of cases by Dana, Corwin, Moorman, Cheeseman, and others. Bruhl discusses the subject at great length and analyses carefully the American observations. The tone of the review is favorable to the operation, and the following conclusions are drawn: Cardiocentesis is a practicable operation, in the majority of cases not dangerous, and may be performed for the relief of dilatation of the right heart not dependent upon organic disease. Aspiration facilitates the operation. The auricle or the ventricle may be punctured.

To puncture the right auricle the needle is inserted in the third right interspace at the sternal margin, and thrust directly backward. To puncture the right ventricle the needle is inserted in the fourth left interspace at the sternal margin. Aspiration of the ventricle is preferable, as there is less likelihood of the production of hemopericardium. Cardiocentesis is practically venesection of the lesser circulation, and also acts as a mechanical excitant of the heart. The observations are not yet numerous enough to formulate a definite judgment on the operation, which is, however, a possible one, not to be rejected on a priori grounds. The operation is of doubtful utility and not without its dangers, as in a case of Dacre's the aorta was punctured, and in at least one case fatal hemopericardium followed. In a case of nonvalvular hypertrophy and dilatation of the heart which was discharged from my wards at the Philadelphia Hospital, the patient was readmitted by accident to the surgical ward in a state of extreme cyanosis. The resident surgeon punctured the heart with a hypodermatic needle. At the autopsy the pericardium contained a couple of ounces of blood which had come from a puncture in the anterior coronary vein. Watson has advocated puncture of the heart in chloroform narcosis, to stimulate the fibers mechanically, but in this procedure there is not only the danger of hemorrhage, but it is quite possible that Kronecker's co-ordination centre—which in the dog occupies the lower part of the upper third of the ventricular septum—might be touched, in which case immediate death would follow.

In puncturing the right auricle it is well to bear in mind that this cavity is not always reached by a needle thrust in close to the sternal margin at the third right interspace. In five bodies, recently, a needle so inserted entered the appendix in two cases, in one close to the fringed edge; in one case the auricle ventricular groove was punctured, and in two the needle entered the base of the right ventricle. With a greatly distended right auricle it might be safer to puncture outside the line of the internal mammary artery—say an inch and a quarter from the sternal margin—and carry the needle downward and toward the left.

Fenwick enumerates the various causes of degeneration of the heart muscle and says that no attention has been drawn to the fact that the pressure of abdominal tumors may produce the same effect. He reports twenty-two cases, chiefly of ovarian cystic diseases, in most of which sudden death occurred, and in which the muscular fibers were found to have undergone fatty degeneration. He concludes: 1. That the sudden death which occurs in cases of ovarian cystic diseases is often, if not always, caused by fatty degeneration of the heart. 2. The long continued upward pressure of intra-abdominal tumors is almost certainly a cause of fatty infiltration and degeneration of the heart muscle. 3. The cystic forms of tumor are those which most commonly exercise this morbid change; perhaps because they can exercise a greater pressure on the thoracic cavity for a longer time without killing the patient, than a solid tumor could do. Pregnancy, it is true, is a kind of cystic growth; but it does not produce this change in the heart muscle, because it exerts considerable pressure for but a very short time. Then, too, by a provision of nature, the heart hypertrophies to meet the dangerous results of pressure thrown upon it by the pregnant uterus.

The diagnosis of this condition of the heart is difficult, but it is based upon the pathological conditions present. 1. The heart's impulse is very feeble and diffused, the sounds dull, especially over the right ventricle, and the first sound, perhaps, inaudible. 2. The radial pulse is feeble, small and compressible. Its rate may be slow or rapid and irregular, but in either case a very important symptom is that on the slightest exertion there is an unusual though temporary acceleration of the pulse. 3. There is a tendency to local anemias and local congestions, pallor of the skin, faintness and even syncope, a constant inclination to yawn or sigh and, possibly, a marked condition of dyspnea. The diagnosis is aided if the age of the patient is over forty, if she has wasted and was compelled to lead a sedentary life, and if the pressure has been kept up for over nine months.

Treatment should be directed toward improving the nutrition of the cardiac muscle, while paying regard to the general health. Regular exercise, even a little at a time, is all important, and in view of the dangers to the heart, the early removal of the tumor should be advocated, or, if this is not practicable, tapping should be restored to.

Idiopathic brachycardia is that which occurs with its attendant symptoms as an independent disease, without any discoverable lesion of any organ of the body. It sometimes follows the ingestion of indigestible articles of food, depressing mental condition, extreme exhaustion, great pain, or nervous shock. It may be considered a cardiac neurosis, and may be transitory or more lasting. The third group, the symptomatic is by far the largest, and includes all those cases in which the temporary retardation of pulse is the result of some other disease. The diseases casually related to the 122 cases of symptomatic brachycardia which Grob reports from his own experience and that of others, are as follows: Articular rheumatism, 27 cases; diseases of the circulatory apparatus, 16 cases; diseases of the digestive tract, 14 cases; diseases of the central nervous organs and of the peripheral nerves, 9 cases; chronic, infectious and constitutional diseases, 9 cases; convalescence after acute febrile disorders, 43 cases. The retardation of the pulse in rheumatism appears to be due to the influence of the poison upon the heart. In diseases of the heart it may occur under a variety of conditions, one of the most frequently reported being fatty degeneration of the organ. Among nervous affections which may produce retardation of the pulse, are both simple and tubercular meningitis, as well as pachymeningitis hemorrhagica in some cases, the first stages of apoplexia cerebri, syncope and apparent death, increased intracranial pressure, especially of the medulla oblongata, produced by tumors or in other ways, occasionally injuries of the upper part of the spinal cord, diseases of the peripheral nerves, as illustrated by some cases of sciatica, diseases of the cardiac nerves themselves, exceptionally Basedow's disease instead of causing the usual acceleration.

Brachycardia in diseases of the digestive tract, produced by reflex action through the vagus or splanchnic, is seen in indigestion, long continuing constipation and icterus. The author has also seen it in a case of carcinoma esophagi, one of carcinoma ventriculi, one of ulcus ventriculi and in two cases of typhlitis. Chronic infectious and constitutional diseases producing quite marked but temporary brachycardia, are represented in his experience chiefly by cases of gonorrhea and soft chancre, all of them complicated by epididymitis or by bubo, and further by a case of anemia. In convalescence from the acute febrile diseases it is seen especially after typhoid fever, but is also reported after typhus, diphtheria, pneumonia, measles and scarlatina. It is also to be marked that in rare instances the pulse is retarded during the fever, to reach its normal frequency during convalescence.

Certain symptoms not infrequently attend the retardation of pulse, among which may be mentioned fainting, extreme oppression, epileptiform or apoplectiform attacks, vertigo and attacks of weakness.

The subject of cardiac nerve storms is an interesting one, especially in reference to essential tachycardia. Dr. Hiram Corson of Conshohocken, Pennsylvania, was a sufferer from this disease for some sixty years, living to complete a practice of the same period, outliving even those who graduated twenty years later. His case has been reported several times by Wood, who comes to the following conclusions:

Nerve-storms, with especial reference to essential tachycardia. "Nerve-storm" is a convenient clinical designation for a sudden, violent, temporary disturbance of the nervous system, either sensory or motor. The attacks of migraine, of angina pectoris, and the crises of locomotor ataxia, are examples of sensorv nerve-storms; the paroxysms of epilepsy and of tachycardia, examples of motor nerve-storms. Tachycardia, or excessive rapidity of cardiac action, may result—(1) from paralysis of the pneumogastric nerve, (2) from reflex influences, or (3) as a part of a neurosis. Such a condition, however, is not a true nerve-storm. To distinguish the latter from the former the name paroxysmal tachycardia is given to the true cardiac motor nerve-storms, with the qualification "essential" when no etiological or exciting moment can be recognized. The condition shows no tendency to shorten life or to develop organic disease,

and is compatible with great mental and physical activity. The paroxysms recur at varying intervals, are unattended with pronounced pain or excessive distress, and may sometimes be arrested by the injection of cold or hot fluids, by a deep inspiration, or by other procedures which stimulate the cardiac inhibitory centre. There is a curious parallelism between the tachycardiac nerve-storm and the epileptiform convulsion. Wood believes the mechanism of tachycardia to be dependent upon a discharging lesion affecting the centres of the cardiac accelerator nerve.

Until a short time ago the prognosis of heart disease was looked upon as extremely bad. This universal opinion was enshrined in Corvisart's quotation, "haeret lateri lethalis arundo." A more hopeful outlook had for the first time been taken quite recently. Experience had shown that many sufferers from heart disease lived in fairly comfortable ease. The lay public did not take so pessimistic a view of the matter as before. The gloomy prognosis laid down by Corvisart appeared to be confirmed by the fact that such patients were never safe any single instant of their lives. Closer examination, however, especially by English physicians—had shown that in the majority of chronic heart affections sudden death was rare, except in the case of inadequacy of the aortic valves (aortic regurgitation) and true angina pectoris (of Heberden). For both these diseases the proposition holds good that the patient is not safe any day of his life; but life may nevertheless be prolonged for years. In relation to aortic insufficiency, Leyden had had a very large experience, both in hospital and private practice. In other kinds of valvular inadequacy sudden death was comparatively rare, in mitral incompetence it occurred in about two per cent. of the cases, that is to say so seldom that the practitioner might leave this unfortunate termination out of account.

Further observations on prognosis might be grouped under three heads: (1) with reference to general disposition and circumstances of life; (2) with reference to special groups of cardiac affections; (3) with reference to particular physical and physiologico-pathological symptoms. In connection with the first of these, the age must first be considered. Young children bear heart disease very badly. In adolescence and early adult life the prognosis is better. This depends on the fact that at that age those forms of cardiac affection chiefly occur in which the prognosis is relatively favorable. At more advanced periods of life, heart diseases are for the most part associated with arteriosclerosis; although they had always a progressive character yet they might be very gradual. Compensative changes were easily brought about in more mature years. But precisely because of this progressive tendency, those forms of valvular insufficiency presented an unfavorable prognosis. The second general etiological factor was the sex. The prognosis was, on the whole, better in the female than in the male sex. If this was less clearly the case in hospital than in private practice, that was due to the fact that women of the lower classes led a life exposed to the same hard work, the same mental disturbances, and partly the same excesses as men. In women of the upper classes these etiological factors were wanting. Arteriosclerosis was, moreover, less frequent in female sex, and even in families in which it was hereditary it affected the female members to a less extent. The female character was better adopted to bear troubles. Finally, experience proved that in women mitral incompetence, in which the prognosis was good, was more frequent than aortic insufficiency. A third factor was to be found in the patient's circumstances and manner of life. Hard bodily labor was the most dangerous enemy to sufferers from cardiac disease. Even mental emotion often aggravated the condition. The less disturbed by worry the patient's life was, the more care he took of himself, the better was the prognosis; therefore, patients in better and easier circumstances bore heart affections better than persons less fortunately situated.

A further point was connected with the possibility of treatment and the reaction of the constitution to medicines, of which digitalis was the most important. The right use of this drug was one of the most difficult problems in medicine. As long as digitalis produced its proper effects, the prognosis was fair; if it failed, the prognosis became less favorable, as the effect of other drugs and therapeutic measures was far less certain. From the diagnostic point of view three classes of heart affections have to be distinguished: 1. Organic defect or disease; 2. disease of the heart muscle; 3. valvular incompetency. 1. With regard to the first of these divisions, the first question which has to be decided in the case of every patient who comes to a physician with disease of the heart is whether the disease is or is not organic—that is to say, whether a definite anatomical lesion underlies the symptoms. The inorganic affections are also designated nervous, neurasthenic, or functional disorders. The distinction between these and organic diseases is sharply defined, so that in a given case it is always easy to discriminate the one from the other. The answer to this initial question is always of the greatest functional affections. Nevertheless, even nervous affections of the heart are, in exceptional cases, especially in elderly persons, attended with evil consequences, and sudden death has been occasionally known to occur from start to fright. That the disease is inorganic may be presumed when accurate physical examination fails to reveal any abnormality. This proposition holds good with two exceptions. Murmurs, almost always systolic in time and loudest at the apex, may be heard in cases of inorganic disease; even dilatation may be present as in Basedow's disease. On the other hand, there may be deep organic disease without any abnormality whatever discoverable by physical methods. These circumstances render the diagnostic and prognostic estimate of a particular case difficult. It is no longer possible to affirm that a heart in which murmurs are heard is diseased, and one in which no abnormal physical signs are present is healthy. Angina pectoris is very important in this connection; three principal forms of this affection can be distinguished, namely (a) angina pectoris vera, depending on disease of the coronary arteries, (b) angina pectoris symptomatica, which is occasionally met with in all forms of heart disease, and (c) angina pectoris nervosa. The first and third of these give rise to no physical signs, but are of very different importance. The whole circumstances of the case must, therefore, be taken into account. In elderly people, especially of the male sex, the disease is more likely to be of the organic form; in younger persons, particularly of the female sex, the probability is that it is of nervous origin. Nervous angina pectoris is, however, also met with in elderly men. As already pointed out, dilatation may occur in Basedow's disease. In such a case, however, the prognosis is not unfavorable in proportion to the severity of the symptoms. Only when the condition is very pronounced, and when complications are present, is life threatened. With regard to the cardiac affections which are associated with disease of the spinal cord, not much is known. In tabes, a form of angina pectoris is met with, whilst progressive muscular atrophy and bulbar paralysis often terminate with symptoms of

paralysis of the heart. 2. With regard to the second of the three classes above mentioned diseases of the myocardium—if those lesions of the heart muscle which are induced by incompetence of the valves be included under this head—constitute perhaps the most important point of the whole subject. The diagnosis of them is difficult, as they are only in small part open to physical methods. Those which can be diagnosed by physical signs may be arranged in three groups, hypertrohpy, dilatation, and want of power or weakness of the heart. In addition to these there are combinations of them, besides intermediate forms.

The prognosis depends on the dangers which the structural changes entail, and on their amenability to treatment. Hypertrophy is not a disease in itself, and does not call for treatment. This point has been particularly emphasized by English physicians. Hypertrophy is the expression or the consequence of severe disease outside the heart—in the arterial system or in the kidneys. The prognosis depends on the gravity of the primary disease. In spite of the presence of hypertrophy, weak action of the heart may occur. Dilatation is one of the most important conditions of the heart from the point of view of prognosis. It is the result of stretching of the muscular substance of the heart, and so far has a less favorable prognosis than hypertrophy. The physician must ask himself whether all dilatations are of equal importance, and whether the condition is susceptible of cure, or rather of improvement, by natural processes, or by medical treatment. There can be no doubt that important differences exist with respect to etiology no less than to prognosis. In the first place, dilatations which are consecutive to valvular incompetence must be distinguished from those, which to all appearance, occur independently of any previous lesion, and which O. Frantzel has termed "idiopathic" dilatations. It must be borne in mind that, on the whole, dilatations of the right heart are of less importance than those of the left ventricle. The former may become developed suddenly, and may as suddenly disappear. Hypertrophy of the right ventricle is not so easily retrogressive. Dilatations of the left ventricle are, on the other hand, of the greatest importance, although it cannot be disputed that even these have been cured in particular cases. This holds good especially of dilatations which come on rapidly after acute disease. Traube observed them in acute articular rheumatism; they occur also after typhoid fever, measles, scarlatina, diphtheria, and erysipelas.

The slighter forms reveal themselves only by "galloping sounds; in more advanced cases there is displacement of the apex beat. All these dilatations are susceptible of cure, but it cannot be said that they are free from danger or always curable. Even dilatations of the left ventricle following overstrain, as also those occurring in Basedow's disease, may appear. Dilatations which have been a long time in developing are less favorable in point of prognosis. In these cases the prognosis in individual cases depends on the degree of dilatation, the nature of the primary disease, and the amount of compensatory change. If the primary disease is in itself an independent progressive process such as arteriosclerosis, the prognosis is unfavorable. It is true that an attempt may be made to improve the efficiency of the heart muscle, but in the majority of cases in which the condition is well marked this will be only temporarily successful. The newer methods of cardiac therapeusis—Oertel's dietetico-mechanical and Zander's gymnastic system, and balneological treatment—open up a prospect of the possibility of something more being done for those cases than has been accomplished by the treatment hitherto employed. Weakness of the heart's action has different causes, and correspondingly different prognosis. Fainting fits in young, nervous persons must always be judged differently from similar attacks in elderly men who are possibly the subjects of arteriosclerosis. Acute weakness of the heart in febrile diseases must always be looked upon as a serious matter. Chronic weakness from valvular incompetence is also unfavorable. The new methods of treatment already referred to will have a good effect in this condition by increasing the size of the heart muscle.

Weakness of the heart often depends on fattiness of that organ. A distinction must be made between cardiac disease, due to accumulation of fat on the heart, and that due to fatty degeneration of its substance. As long as there is no considerable alteration of structure in fatty heart, the prognosis is not bad. It is doubtful when dilatation is established. The prognosis in fatty degeneration is always bad. With regard to the third class of cases, in which there is valvular insufficiency, in the first place it cannot be denied that cases of recovery occur. This happens most frequently in the case of recent mitral inadequacy which has come on with chorea. Recovery sometimes occurs, even in cases of aortic insufficiency. It must be recollected, however, that no inference as to cure can be drawn from the disappearance of a diastolic murmur. The further question whether, without cure of the defect, the patient can be to a certain extent fit for work, and can have any enjoyment in life, is a very important one. It must be remembered that not infrequently heart disease is discovered accidently in persons who feel perfectly well.

There are cases of valvular defect in which compensation remains complete through a series of years. Practitioners are not yet agreed as to the conclusion to be come to in such cases in relation to marriage, life insurance, etc. The prognosis of aorticin sufficiency depending on arteriosclerosis is most unfavorable. If, besides the diastolic murmur, a heart sound can be heard, and there is no arteriosclerosis, the defect can be better borne. Further, the degree of hypertrophy in the left ventricle is of importance. The diagnosis is relatively better in simple mitral inadequacy. It is a mistake to take the loudness of the murmur as a guide in prognosis. The underlying essential disease is the important matter. If this is progressive, as in arteriosclerosis, the prognosis is bad; it is also mostly unfavorable in acute febrile ulcerative endocarditis. It is comparatively good in cardiac affections consecutive to acute diseases, such as measles, scarlatina, typhoid, articular rheumatism; in the case of the last-mentioned disease, however, both it and the endocarditis are apt to recur. Leaving the form of affection out of account, the prognosis depends on the condition of the heart muscle. Robust, well-nourished persons in good circumstances bear heart disease better than others. On the whole, the prognosis is better in systolic than in diastolic murmurs. A large number of systolic murmurs do originate within the heart, and even a considerable proportion of endocardial murmurs may disappear; only systolic murmurs with an arteriosclerotic basis are of serious import. With regard to rhythmical irregularities, intermittence and arhythmia must be considered.

The stoppage of the pulse has as such no serious prognostic significance; it may arise reflexly from the most diverse causes. Arthythmia is often habitual and of no importance. On the other hand, delirium cordis and tremor cordis are always suspicious. Tachycardia, as the expression of commencing or established, paraly-

sis of the vagus, is never unimportant. In fever a pulse of 120 is suspicious; only in children suffering from acute exanthemata can a higher pulse-rate be tolerated for any length of time without injury. Slowness of the pulse, on the other hand, is not of itself suspicious; it is often, however, a sign of weakness and an indication for strengthening treatment and a contraindication of digitalis. Permanent slowness of the pulse, when there is ground for suspecting arteriosclerosis of the coronary arteries, is always risky. Not infrequently sudden death occurs under these circumstances.

As a remedial measure, rest frequently requires to be absolute; as a preventive one it may be only relative. The amount enjoined must be carefully proportioned to each case, as in advanced mitral disease, when the power of the heart is failing, absolute rest gives satisfactory results, in that the circulation recovers its balance, the arteries become filled and the veins emptied, the dropsical effusion and venous engorgement of the organs disappear, and the patients recover a fair amount of health. In cases of mitral disease incompetence may come about from (1) enlargement of the auriculo-ventricular orifice, (2) thickening of the valves, or (3) inco-ordinated action of the musculi papillares. In the first case it may be hard to say if this be the sole cause of the regurgitation, without any obvious disease of the valves, as some disturbance of the relationship between the musculi papillares may tend to aid the regurgitation. In such hearts in growing boys and in chlorotic girls gentle exercise is advisable, but it must be carefully graduated, as exhaustion is likely to do harm. Massage may be useful, as it gives the patient exercise without putting any strain upon the heart. With a fatty heart gentle exercise may be advisable, as it may be more likely to bring about a healthy condition of the heart than absolute rest. When in mitral disease cardiac tonics, even pushed to their utmost limit, fail to give relief, then absolute rest becomes of great importance.

Massage is of great usefulness in clearing the body-waste, quickening the flow of blood through the muscles, and relieving the edema, and the patient gets the advantage of the exercise without overdoing his heart. It also allows the treatment to be carried out more easily than it would otherwise be, for it removes the feeling of weariness and irritability, fidgetiness and unrest of the patient.

Cold Air and Sunshine in Capsules of Steel and Glass.—Under this title an article in *Charities* describes some of the plans which are being worked out by the city government of Philadelphia for the enlargement of the general hospital on the present municipal property in West Philadelphia, and the erection of tuberculosis pavilions there.

The Board of Charities and Correction has advertised bids for these pavilions. Philadelphia is thus following New York in the provision of special phthisis hospitals for the sick poor, but while New York is making immediate use of old buildings under the control of the Department of Public Charities on Blackwell's Island, the Philadelphia board will take time to erect a plant along unique lines of construction for the open air treatment of consumption. The pavilions will be practically entirely of steel and glass. They will be eight in number, 60 by 50 feet, with provisions for 30 patients each. They will be one story in height, and the trussed roof, the sides, and every part of the pavilions proper, with the exception of the steel frames, will be of glass. The doors and windows will be pivoted, so that ordinarily the air can sweep through, and if the weather be cold and damp all can be closed. Under such conditions, a hot-air blower system of heating will force fresh air into the rooms and draw it out by exhaust fans so that the atmosphere will be changed every 10 minutes. The condensation on the glass walls and ceilings will be taken care of by a system of guttered skylights. What colored glass will be used a board of physicians will decide. After a careful study, architect Philip H. Johnson believes that light green glass will be the best. He estimates the entire cost of the pavilions at $140,000.

Among the noticeable features will be dining-rooms equipped to seat 20 people, and provided with food warmers, as, in order to avoid the possibilty of infection, meals will not be cooked in the pavilion. Bathing facilities—showers and tubs—will be of special construction. Two doctors and three nurses will be in attendance at each pavilion.

It will be a treatment not only of cold air and sunshine—for the inmates will be in a veritable solution of these—but everything will be done to make the social atmosphere surrounding the charity patients equally cheerful and bracing. And for the resident physicians and nurses who give themselves up to this work no pains will be spared in the way of private rooms and comforts to brighten what must necessarily be the depressing environment of such an institution.

During a recent visit to New York, a party of Philadelphians, including members of the Board of Charities and Correction, spent considerable time in the phthisis hospital on Blackwell's Island, and manifested special interest in the way problems there have been worked out within the last few months under Commissioner Folks.

"Facultative Sterility" is the term used by Koch of the University of Bonn to designate a new procedure he has devised, and which he recommends for use when it seems necessary to prevent possibility of conception for any length of time without permanently depriving the subject of procreative power. He forms two folds of mucous membrane, one at the anterior and the other at the posterior lip of the external orifice of the uterus. These act as valves, permitting the outflow of the menstrual fluid and preventing the entrance of the spermatozoa. He uses the word "facultative" because, by the removal of the folds, fertility may be restored. Since the days of Sims and his artificial impregnation (says *American Medicine*) no procedure has been introduced to the profession which seems quite so original and ingenious as this. It remains to be seen, however, how effective these artificially produced valves will be against the spermatozoa, possessing as they do such remarkable motility. Should they prove effective, the procedure will be of great value in the class of cases in which tubal ligation or exsection has hitherto been practised and particularly in married women suffering from diseases of the lungs, heart, or kidneys, rendering pregnancy peculiarly perilous.

—The formation of a new temperance society, of which Field Marshal Lord Roberts is the President, is reported from England. The members of the organization pledge themselves to drink no alcoholic beverages between meals.

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The soul grows by leaps and bounds, by throes and throbs. A flash! and a glory stands revealed for which you have been groping blindly through the years.

MUSICAL THERAPEUTICS.

THE influence of music upon all animal life has been noticed by even casual observers as far back as history extends. These accounts, some of them were so wonderful, that Mr. Frank C. Baker, the Curator of the Academy of Sciences in Chicago was induced to verify some of the statements by trying the effect of musical sounds on the birds and animals confined in Lincoln Park, by playing a variety of selections on his violin before the different cages. He found they were moved to nervousness by discords or rollicking airs and became quite contented and happy with softer, sweeter music. The effect produced on different animals was determined by the character of the music—classical music moved the jaeger to anger, lashing his tail and growling as he sprang from one end of the cage to another. A change in the music brought a change of temper, the animal remaining perfectly motionless and absorbed, and when the musician moved slowly away he rose hastily to his feet and thrust one of his paws through the bars, as though he would beg him to remain. A lioness and her cubs remained perfectly quiet while "Sleep pretty sleep" was being played, but when "The Irish Washer Woman" was given, all the animals seemed to enter into the very spirit of the music manifesting the greatest delight. The monkeys seemed enchanted with the concert, listening to every note and could not seem to get enough. All the animals expressed their likes and dislikes in a manner peculiar to themselves. A celebrated naturalist of Paris on repeating similar experiments found that with the exception of the spider and a few large serpents everything that had life seemed to be affected by music, particularly the scorpions and lizards who beat the measure with their tongues and balanced their heads to the movement of the music. The cobra raised itself on its tail, balancing the body to the rhythm of the melody. There was not a change of tone or of timbre that did not produce a corresponding change of attitude. At a tremolo it was his belly that enlarged, at a pianissimo his head, and when there was a dissonance the cobra twisted as though it was in pain. With the constant increasing illustration of the wonderful effects of music not only upon the lower grades of animal life, but upon the human organization, it is a wonder that its subtle and far-reaching power has not been utilized to a greater extent and its action studied more minutely from a psychological standpoint in the treatment of disease. The increased study of psychology and its wonderful revelations is bringing us into closer contact and clearer understanding of those subtle forces which control the currents of life. The crude materialism of the past in every department of science, but especially in therapeutics, is rapidly giving way to a clearer understanding of the laws of nature as they are daily unfolded to a more advanced intelligence. We are just beginning to realize that in music we have a great curative agent, but that to produce its best effect it must be studied from a scientific standpoint. Each case of disease being individualized with the utmost care and the character of the music so adapted as to produce the greatest harmony in its vibrations with the vital force, or in other words, the kind of music must be determined by the temperament and the nature of the disease. In unskillful hands harm may be done to even a greater degree than any other remedy where the conditions have not been carefully studied and the indications clearly defined. This may be illustrated by the recent introduction into aural practice of what is called musical massage, with astonishing success, for deafness and other diseases of the ear affecting the auditory nerve. The first and most important step in this treatment is the reiterated sounding of the person's key note upon the ear. The key note can easily be obtained by any skilled musical observer by requesting the patient to pronounce each of the vowels in his singing voice, prolonging the final u until the corresponding note is found on the piano. Higgins, in his Philosophy of Sound, says every note produces a certain number of vibrations, and a certain number of vibrations in a second will always produce the same note, whatever the instrument used. The power of the vibrations in the individual may be understood from the law that the undulations of every vibrating body can put in motion any other body when the vibrations are the same. The statement of Professor Higgins shows the importance in using music as a curative agent to get the patient's key note and repeating it at stated intervals the same as other remedial agents. Gretny, in his essay on music, cites numerous instances of the great benefit derived from the rhythm of music in which the correct key note has been obtained, in various forms of disease in which the circulation has been affected in a marked degree. He says, "To determine the key note, place the three fingers of the right hand on the artery of the left arm or any artery of the body, sing an air the tempo of which is in accordance with the pulse. Then change to one

quicker or slower and note the pulse; not suddenly but by degrees it will accommodate itself to the new tempo. For example, first sing the "Watch on the Rhine," then Schubert's "Ave Maria," and noting the pulse action, it will be found that the former stirs the heart to a quicker and more vigorous beat, while the latter soothes it to a less rapid and softer rhythm. Dr. Warthin, of Vienna, tells of a man whose pulse would at once become more rapid and stronger while sleeping when a certain air was played. The tension would increase to 60 and the beat to 120 while the respirations would rise from 18 to 30 in a minute and in a short time the body would be covered with a perspiration. This might have been an exceptional case but the evidences of the wonderful effect of music properly utilized on the circulation are so numerous and so familiar to all as to admit of no dispute. The wonder is that instead of being used occasionally in hospitals and in general practice it is not, guided by certain well defined and scientific laws, taking the first rank in the repertory of remedial agents. One reason, perhaps, is that the law of vibrations is just beginning to be understood even in that advanced psychology which is giving us a clearer insight into those subtle forces of nature which control the development and the phenomena of life. It is only within the past few years that music as a curative agent has been studied to any great extent from a strictly scientific standpoint and utilized with the same care as other remedial agents. This has recently been done in a hospital in England and in another in Berlin. Psychology, as now taught in some of our colleges, is a comparatively new branch of study and has not yet found its way, except in a limited degree, into our medical institutions. But even now in what may be called a primary study in this department of science we catch fore-gleams of the possibilities of the future in that new and higher life into which it is guiding us. The study of light, heat, and electricity which must of course include the law of vibration and the developments made along those lines is changing the whole trend of what was called scientific thought and casting a clearer and more intense light upon all the processes of nature. A study of the law of vibrations must of course enter largely into that new therapeutics from which so much crude and illogical matter must be eliminated and in which music in its action upon the circulation as an important factor, must be correctly interpreted and its application guided by scientific intelligence. In unskillful hands it may be as powerful for injury as in skillful hands for good. If every hospital or asylum included in its medical staff a musical director and if every physician and trained nurse understood the nature of its action there is no telling the good that might be accomplished, the lives brightened and the tangled brains restored to harmony.

—Unvaccinated persons are not allowed to vote in Norway.

PROHIBITION AND THE ALCOHOL QUESTION.

THE problem of the food value of alcohol does not seem, after all, to have been finally resolved by Prof. Atwater. A German physiologist of high standing, Prof. Kassowitz, has lately published the details of an experimental investigation which has led him to precisely the opposite conclusion. A certain number of dogs were given definite amounts of food, some with and some without alcohol, and required to take a stated amount of exercise each day in a running machine. These trials, and several others of a like nature were repeatedly carried out, and it was found that the recorded results were uniformly against the alcohol-fed dogs, both as to the amount of work accomplished and changes in weight. The author is of the opinion that no food material can be used in the body without first being converted into protoplasm. Since alcohol, being a stimulating and poisonous substance, destroys the highly complex and unstable protoplasmic molecule, it cannot at the same time be assimilated by it, consequently it cannot act as food and poison simultaneously. After a comparatively short period, alcohol paralyzes the center of innervation of the muscles and, therefore, by diminishing the amount of muscular action, the secretion of carbonic acid is lessened. The diminished secretion, consequently, means no saving of the tissues of the body, but is a direct result of the poisonous action of alcohol. Kassowitz is convinced that under no circumstances can alcohol act in a nutritive manner. Such is the latest authoritative pronouncement on this subject from the world's scientific center. What do we learn from the facts of human experience? Daily observation shows that all men who drink do not become drunkards. Those who are thus unfortunate are not so because they are weak in will or morals, for men of the highest character have become inebriates. A man is a drunkard because he has a nervous system that is peculiarly susceptible to the poisonous qualities of alcohol. No young man, when he begins the moderate use of alcoholic beverages, knows whether or not he belongs to the class that can drink without danger. He can find this out only by experiment, and after the experiment it is likely to be too late to avert the disastrous results, against which strength of character and will is no safeguard, any more than it would be against smallpox. Therefore (as Dr. C. J. Douglas has pointed out), strict avoidance of alcoholic beverages is the only logical conclusion, if the gravest perils are to be avoided. This position conceded, it follows inevitably that the sale of alcoholic beverages ought to be restrained by law. But it is now declared in certain quarters, that prohibition, after being tried in several States for many years, has been found to aggravate the very evil it was designed to cure—besides fostering the additional vice of hypocrisy. In Maine, for instance, the great mass of the male population, we are assured, persist in regarding it as "no crime to take a drink whenever they want to." Why, then, do they not

rise in their might and wipe out the useless and obnoxious statute? The true reason, probably, is given by the *Maine Journal of Medicine and Science*— the official organ of the Maine Academy of Medicine and Science, and the only regular medical journal published in the State—when it says that prohibition *does* prohibit, if there are only zealous and faithful officials to enforce the law. That the law can be enforced was shown, it says, by the late sheriff of Cumberland County, and a notable diminution in the demands on the poor fund was an immediate result. It cites, further, the experience of the city of Quincy, Mass., which, for 20 years has been without the open saloon. During that time it has doubled its population, tripled its valuation and increased its savings bank deposits over four-fold. All this is not so remarkable as the additional fact that while the population has doubled, the amount required for poor relief has diminished by a notable percentage. This is testimony from an apparently competent witness on the ground, and must be accepted until rebutted by better. It is undeniable that we cannot absolutely prevent illegal liquor-selling any more than we can robbery and murder or less criminal acts, but this truth does not warrant the commonly repeated assertion that "prohibition does not prohibit," in the sense that it cannot successfully prohibit. The real difficulty undoubtedly is that the people concerned cannot or will not often enough elect officers who, sworn to enforce the laws, will not perjure themselves. That any community is better off without the free and open sale of liquor needs no argument; and it is to physicians at least, an established fact that has no relation with the academic question of the consumption of alcohol in the healthy organism or that of its occasional value as a medicine in pathologic states. It is simply a question of appetite, and appetite rules, unfortunately, too much.

It is a little noticed fact, yet none the less striking, that all this is beginning to be found out even in States which newspaper paragraphers have long been in the habit of classing as hopelessly addicted to the flowing bowl. A large part of Kentucky is at this moment under local prohibitory law, and the New Orleans *Times-Democrat* states that Texas is already on the verge of prohibition. If we compare the population of the wholly or largely "dry" counties in that State with the population of the wholly "wet" counties, we shall find that three-fourths of Texas is actually under prohibition. Finally, as in Mississippi and other States, the Prohibitionists, having carried a majority of the Counties, have decided upon appealing to the Legislature for a State election which would pass on the liquor question for the entire State. A few years ago prohibition would have been voted down in Texas by an overwhelming majority, but the movement is so strong now that the saloon people are afraid of the election and are working to avoid it. This does not look much like that reaction which the advocates of moderate indulgence would fain persuade us has set in and is bound to prevail against the pernicious ascendancy of "Neal Dowism." Rather does it point to a universal popular recognition in the near future, of the fact that the liquor-dealing element everywhere is hopelessly in conflict with civic welfare, and must either rule and ruin, or be utterly suppressed.

THE DANGER OF WOOD ALCOHOL

THE subject of wood alcohol is again brought to our attention by the action of the Board of Health in causing the arrest of some forty druggists of this city who had been found substituting this article for that made from grain, which is far less dangerous and costs a dollar a gallon more. Some months ago we treated this subject editorially and stated some of its untoward consequences.

Of late we find this virulent poison is being used as a substitute in external applications to such an extent that we feel it a duty to sound another alarm, and urge the profession to frown upon it vigorously! It is a great mistake to suppose that wood alcohol is safe as an external application, for it is readily absorbed, and will show sooner or later if continued, its most fatal and insidious character. The manufacturer has succeeded in making his product to so resemble grain alcohol that deception may easily be practiced upon the confiding customer.

Some people are exceedingly susceptible to its toxic effects, even inhaling the vapor while working with it in the trades being sufficient in some instances to set up alarming symptoms. It has a profound effect upon the intestinal canal, and upon the sensorium, as shown by the headache, vertigo, delirium and dilatation of the pupils. Its manifestations are so consistent and characteristic that diagnosis is not difficult. The ophthalmoscopic appearance is that of optic neuritis, with exudations into the retina, and subsequent atrophy. The calibre of the retinal vessels is much diminished, and the veins are tortuous, containing very dark blood. In the early stages an absolute central scotoma and color-blindness are found.

This condition is said to depend upon primary retrobulbar neuritis, or it may be in consequence of nutritive changes in the ganglion cells of the retina. No treatment has been found to be of service in any respect.

It is evident that an unsuspecting public is being flooded with a subtle poison dangerous to vision, even going on to complete blindness, and perhaps to death, in some instances, from very small quantities.

To meet this calamity, 1st means should be used to acquaint the public of its dangers, 2d label all vessels or preparations containing it with the "skull and bones," 3d urge Congress to tax this product so that the price to consumers will be the same as ethylic alcohol, and thus do away with the temptation to substitution.

It would be well to add to the poison label "this preparation contains wood alcohol" when this is the case. Its use in household remedies is already prohibited by law, and all druggists should be notified of this fact.

Our Public Health authorities can do much, but each individual physician can do more to prevent the spread of this dangerous practice!

THE BEST YET.

WE must confess to feeling some doubt as to the appropriate heading for this article. "Charity Suffereth Long and is Kind," "Charity Covereth a Multitude of Sins," "The Slickest Among Us Has a Graft," or its original, "The Weakest Among Us Has a Gift," might each be taken as a suitable text upon which to preach the sermon that we have in mind. Or, it may be that a simple recital of facts will suffice and that each of our readers will preach his own sermon.

Several young women of charming manners and appearance have lately canvassed a certain city, selling tickets to a concert by local talent, in benefit of the dispensary of a local medical school. Among the laity they have met with very uniform success. Among the medical profession, they have sold tickets to many of the physicians identified with the medical college and its dispensary, but a considerable number of the other physicians solicited have declined to invest in this cause, some giving one excuse, some another. Quite a few of the more outspoken have explained that they regarded the college as a purely business corporation, existing primarily for the good of its members and not filling a long felt want in the community. Furthermore, they have stated that the dispensary was not a public need and not essentially a charity, since the patients were utilized in the regular work of the college, for which the students paid their fees, hence, they argued, the managers of the college and dispensary should meet any necessary expenses of the dispensary as they would any other current expense of the college. If they were shrewd enough to get the funds out of their lay friends by private solicitation, well and good, but they certainly should not make a public appeal for aid in carrying on a business enterprise, or, at the very least, they should not appeal to members of the profession who understood the situation and who had no personal interest in the institution.

Viewed impartially, it must be admitted that there is considerable justice in such a contention. The college in question is, certainly, an institution existing for private ends and with no public responsiblity or guarantee further than is demanded by law. On the other hand, it complies fully with the law and it renders a quid pro quo to its students by carefully considering their comfort and welfare, while demanding honest effort on their part and supplying to a degree, exceeded by only a few really public institutions, the various didactic and laboratory facilities necessary for medical instruction. As regards the dispensary itself, it is rather inaccessible to the poor and there can be no question but that the poor would be amply provided with medical attendance by the city staff of physicians and by other dispensaries, if the University dispensary were closed. Still, like the college in relation to its students, it deals fairly and skillfully with its patients and it manages to attract a considerable number of patients who are willing to go a considerable distance and to submit themselves to clinical demonstration, in return for free medical and surgical service.

We are inclined to the opinion that, in all similar cases, the public should not be asked to contribute to a medical charity, unless they are duly informed as to the interested motives behind the charity. Any contributions which can be secured from persons having full knowledge of the circumstances, may properly be received, or the public may be asked to contribute to any work in which the profession generally cooperates.

But, we are informed that there is a rather peculiar condition in regard to the particular local-talent entertainment which suggested this article. It was noticed by some that the ladies who were so much interested in the philanthropic work were strangers, and it has developed—at least we are so informed—that they are partners or employees in a unique enterprise which makes a business of arranging benefit entertainments for charitable institutions. A certain sum is paid to the beneficiary for the use of its name, amateurs are easily persuaded to give their services for the ordinary kind of a benefit show, and the public can be made to yield from fifty cents to a dollar for a ten-cent show, provided the object is a good one. Most persons feel that they have done their duty in buying tickets without making the additional sacrifice of attending the entertainment, so that even if the entertainment did come to pass, there would be few complaints. However, we have no reason to believe that the amateurs who have graciously donated their services, will refrain from the rendition of the "Last Rose of Summer," "Curfew Shall Not Ring Tonight," and various familiar instrumental selections.

As we said at the beginning, we shall leave the preaching of the sermon to our readers. We are, personally, in very much the same position as the little boy who was told a wonderful story by an adult, and who was then asked what he thought about it. His reply was "Oh, sir, I am too polite to tell you what I think about it!"

RAILWAY HOSPITALS.

IT is not generally known that in the railway hospitals and hospital car service now being established in connection with the leading railways in this country we are following to a certain extent the example of foreign railroads in which Russia has the most improved system from whom we have derived some of our best and most practical ideas. When we recall the fact that during the last thirteen years the average number of deaths from railway accidents among employed alone has been 2,500, and every year more than 27,500 employees receive injuries, from which they recover, the necessity of hospitals and especially hospital cars is apparent.

Along the Eastern trunk lines, where there are well-

equipped hospitals in almost every city and town, the permanent railroad hospital is hardly a necessity, though several corporations provide them. Hospital cars, capable of being attached to wrecking trains and sent to the scene of trouble at a moment's notice, are more to the point. Such a car was recently provided for the New York division of the Erie Railroad. The Long Island Railroad has another.

This car is considered a model in its way. It is divided into three compartments—operating room, a small ward with bunks for the slightly injured, and another with six cots for those who are more seriously hurt. The operating room has an operating table fully equipped for surgical use. A tank of oxygen and a sterilizer are a part of the apparatus. Other roads are satisfied with putting several army stretchers into each baggage car. The New York Central has employed a corps of resident surgeons and equips each train with surgical instruments.

In the West and Southwest, where public hospitals are few and far between, the railroads have built up chains of permanent railway hospitals along their lines. The hospital department of the Missouri Pacific Railroad is the one from which most of the others are copied. It treats annually about 40,000 patients. In the St. Louis Railway hospital, the largest railway hospital in the world, 18,000 patients were treated last year. The department is a pioneer, having been established in 1879 with a hospital at Sedalia, Mo. The principal hospitals are at St. Louis and Kansas City, with emergency stations at eight other important divisional points.

The Atchison, Topeka and Santa Fé Hospital Association, an incorporation of employees, supports five hospitals and has the services of 175 local surgeons. They have treated as many as 35,000 patients in a year. The Northern Pacific Railroad has a combined hospital and relief service, which is maintained by assessments on the employees.

OUR PRESENT KNOWLEDGE OF DIABETES MELLITUS.

IN many diseases physicians have been able to trace their origin to some definite cause. Exposure to cold produces rheumatism and pneumonia; exposure to certain micro-organisms produces certain definite results, but in diabetes, the case is largely different for here we have the history of a patient who has been living on a certain diet composed of carbo-hydrate and proteid foods, which have been sufficient to maintain the tissues and organs of the body in a normal condition, suddenly and generally without warning, living the same life and eating the same food, the patient shows the presence of sugar in the urine and other diabetic symptoms. The problem at once suggests itself what has produced this change in carbo-hydrate metabolism? Has more sugar been poured into the blood, or has the normal amount not been consumed in the usual manner?

Tyson in a recent magazine article takes up this interesting subjects reviewing the latest work of Bernard, Pavy and Hester. Bernard demonstrated the fact that an amyloid substance termed glycogen is constantly being produced and stored in the liver and muscles of both men and animals. The most important property of this substance is its convertibility into glucose, grape sugar or dextrose. To accomplish this, requires the normal temperature of the body, and the action of a diastatic ferment. Undoubtedly normal glycogen originates not only from the carbo-hydrates of the food but also from the proteids and to a small extent from the fats.

Many observers have taken up the question of the production of this glycogen and its subsequent products. According to Pavy, a considerable portion of the carbohydrates ingested is converted by the cells of the villi of the intestinal mucous membrane into fat, and carried into the blood by the lacteals; while he regards the office of the liver as supplementary to the assimilative work performed elsewhere. In his most recent paper, published in the *British Medical Journal*, October 12th, 1901, Pavy states that if the latter work is efficiently performed, none is left for the liver to accomplish. It is the sugar that is permitted to reach the portal vein, that is taken by the liver, and it may happen that none reaches it in health. This view of Pavy has been disputed by many observers.

It has been the tendency of the times to study other organs besides the liver, for their relation to diabetes Lauceraux was the first to formulate any relation between diabetes and the disease of the pancreas, while Lepine, Lemoine and Launois have done much to bring out the relationship between diabetes and pancreatic disease.

The relationship between the kidneys and diabetes has not been very clearly made out, personally Tyson does not believe that Bright's disease ever produces diabetes, although they are occasionally associated. Much more important are the relations between this disease and the suprarenal capsule, from which the following facts are practically undisputed: (1) That in a certain number of cases of suprarenal disease glycosuria has been present; (2) that bronzing of the skin analogous to that which occurs in Addison's disease is occasionally found in diabetics (bronzed diabetes); (3) that an intimate relation exists between the normal destruction of sugars and the formation of the bile-pigments and their congeners, the abnormal pigments; (4) that subcutaneous injection and injection into the peritoneum of animals, of pancreatic extract, is followed by glycosuria, and that in like manner adrenalin chloride, a substance derived from the adrenals, has the ability to cause glycosuria when injected into the peritoneum or painted in weak solution over the pancreas.

It is undoubtedly the tendency of the times to attribute glycosuria to defective oxidation, certainly the following facts seem to be assured:

1. An alimentary glycosuria due to an imperfect as-

similation of carbohydrate into fat and proteid in the intestinal villi, as a consequence of which it passes over into the portal circulation in larger quantity than can be converted into glycogen by the liver.

2. A glycosuria due to the overproduction of glucose out of hepatic glycogen.

3. A glycosuria due to the fact that through vasomotor influence the glucose passes through the liver too rapidly to permit its conversion into glycogen.

4. A glycosuria due to defective oxidation of glucose. For such deficient oxidation, derangement of the function of the pancreas may be responsible, either by disease or by interference exerted by deranged suprarenal function.

5. There remains, however, another source of glycosuria which adds greatly to the complexity of the problem, and is the indication of the most intractable stage of the disease diabetes mellitus, viz.: glycosuria arising from the disruption of proteid, with the liberation of glucose. This is seen in the last stages of the disease, when even a pure proteid diet is attended with free excretion of glucose by the urine. Nay, more: at this stage even the fixed proteids of the tissues yield to the inexorable demands of the economy for glucose for needs which it is still unable to supply because of defective catabolism, and what is really a starvation results, with rapid emaciation, great debility, and death as its terminal event, unless this is precipitated earlier by the acid toxins, viz.: acetone, diacetic and oxybutyric acids, which follow in the wake of defective glycolysis.

To the practicing physician naturally the thought suggests itself what new line of treatment comes from these discoveries. At present, we withdraw carbohydrate food, with the idea that the increased amount of proteid food will make up the deficiency, and with the hope that a temporary cessation of the glycogenic, and glyco-destructive offices of the economy will lead to a restoration of function. Naturally also we should seek for remedies which will increase the oxidation of the glucose thrown into the blood from the liver. For this purpose arsenic is useful, for it increases the number of red blood discs; and the quantity of hemoglobin in them. Naturally this remedy is more useful in the milder cases. Iron in long continued doses cautiously given, to prevent constipation has also excellent effect. With this, undoubtedly it is proper to regulate the patient's method of living. It should include massage, bathing of the body daily with warm water, and exposing the body as much as possible to the sun, and walking. Richardson of London lays great stress upon the bathing and walking, which may be particularly irksome to the patient on account of his lassitude and weakness.

—In tapping the chest (*Intern. Jour. of Surg.*) it is well to remember that a line drawn horizontally from the nipple around the chest passes over the sixth intercostal space midway between the sternum and the spine. This rule may prove serviceable in stout people in whom it is difficult to count the ribs.

RECENT RESULTS FROM THE INJECTION OF COCAINE

THE subject of local anesthesia has attracted not a little attention on the part of the medical profession in recent years. This is especially the case in respect to the injection of cocaine into the spinal cord; but up to the present writing it has proved to be rather a bold procedure. Following we give conclusions pro and con arrived at through the observations of some of the most eminent men of the profession.

As is often the case, this line of treatment has been examined more thoroughly and carefully abroad than it has been in this country.

Bainbridge comes to the following conclusions (*Medical News*, May 4, 1901), after reporting twenty-four cases of operations performed during spinal analgesia: 1. Cocaine is far more satisfactory than eucaine. The latter is less potent, more evanescent, the areas of analgesia are frequently "patchy," having the pain sense retained all around them and not being so complete below definite levels. The cocaine produces no more unpleasant after-effects than eucaine, and is decidedly more reliable. 2. Analgesia to the level of the diaphragm can be depended upon in all cases where a moderate dose of a potent solution of cocaine has been introduced by lumbar puncture. In some the analgesia is sufficient for operation on the upper extremities. 3. Complete analgesia, including the eyes, mouth and throat, has occurred. It does not entail more severe after-effects than when the lower extremities only are involved. 4. The preparation of the patient as for a general anesthetic diminishes all the unpleasant effects of cocaine and eucaine, and often prevents them altogether. 5. By moderate doses of bromides before the injection the initial vomiting is frequently avoided and the liability of headache lessened. 6. In neurotic patients there are often hysterical symptoms directly following the completion of the injection; but, as a rule, in a few moments a calm follows and the patient lies perfectly still. 7. Initial nausea and vomiting often occur soon after the puncture, but last only for a moment or two, and usually do not recur during the operation. As consciousness, as well as the muscular power, is preserved, the danger of the introduction of the vomitus into the lungs is practically nil. 8. Analgesia lasts from thirty minutes to four hours. 9. Depression after the puncture is considerable. The use of ethyl chloride (Bengue) largely prevents pain when the needle is introduced. 10. The preparation of the patient, the use of nitroglycerine by hypodermic injection, or the employment of coal-tar products with caffeine, control the headache, which is in many instances an after-effect of spinal puncture. 11. In a few cases there may be motor paraplegia or vertigo. Both are temporary. 12. Spinal puncture has not affected normal or diseased kidneys. 13. Usually the tactile power, muscular sense, and the ability to detect heat and cold are retained. The cautery at a dull red heat causes no pain, while hot water produces marked discomfort. 14. Usually the patient sleeps the first

night. 15. There is often a temperature of a few degrees within eight or ten hours of the operation. Whether this is a direct result of the puncture or the effect of psychic disturbances is not determined. The circulation and respiration are not seriously embarrassed.

As to spinal anesthesia, Dumont gives an unfavorable report (*Correspondenzblatt für Schweizer Aertze*, October, 1901). This surgeon had such unpleasant results in these three cases, that he stopped its use at once, and he believes that general anesthesia would have given better general results. He has collected and reported a number of cases which have been followed by disastrous results. He quotes Gumprecht, who reports seventeen (17) fatal cases, two of which occurred in his own practice. Dumont comes to the conclusion that, while cocainization of the spinal canal is an original method of producing anesthesia, there is small probability of its supplanting permanently the regular methods of general anesthesia.

Sherrill has studied the present situation of this much debated subject (*American Medicine*, October 26, 1901), and believes that cocaine analgesia is not likely to prove satisfactory in operations above the level of the diaphragm; that probably it will not be much used in abdominal cases which are not clear, and are likely to prove tedious or difficult; that its special field will be found in operations upon the lower extremities, including amputations and resections, and upon the perineum, bladder and rectum; also that it is useful in operations on old persons and those suffering from diseases of the heart, lungs, or kidneys, from cirrhosis of the liver, and from abdominal dropsy; and that it can be successfully employed when a patient fears general anesthesia.

In the treatment of cerebro-spinal meningitis by lumbar puncture, Koplik reports a series of cases of this disease treated by the Quincke method (*Medical News*, March 23, 1901). He made the puncture on the fifth, sixth, eighth, ninth, tenth, thirteenth, sixteenth, nineteenth, twenty-fourth, twenty-eighth, thirty-sixth, and thirty-seventh days of the disease, withdrawing from three to fifty c.c. of the cerebro-spinal fluid. The fluid continued turbid up to the thirty-seventh day, and in the examination by Councilman, it was found that a diminution in turbidity frequently occurred with absence of micro-organisms. In one of Koplik's cases were the micro-organisms absent. As a result of this treatment, Koplik found that the various symptoms were relieved for a time, at least. The operation was indicated when pressure symptoms or accumulation of exudate were noticed, and it was not repeated unless there was an exacerbation of the disease.

As to the treatment of sciatica by means of spinal cocainization the use of this therapeutic measure has been reported during the year by Maris, Guillani (*Gazette Hebdomadaire de Médicin et de Chirurgie*, No. 27, 1907), and by Pullo (*La Riforma Medica*, No. 44, 1901). In the first instance, which was that of a man, suffering from acute sciatica, five-sixty-fourths of a grain of cocaine were injected; the pain disappeared in a few minutes. Later the pain returned, but was less severe, and gradually it disappeared. The latter case was a stubborn attack of sciatica which had resisted all other forms of treatment. Twenty drops of a two per cent solution were injected; on the disappearance of the analgesia the excessive pains of the sciatica disappeared. This is excellent results for a disease naturally very intractable.

MAN'S PLACE IN THE UNIVERSE.

THE venerable English scientist, Alfred Russell Wallace, the joint discoverer with Darwin of the theory of "natural selection," has in an article in the March *Fortnightly Review* startled the world with a theory based as he says upon the new astronomy in which he attempts to locate "Man's Place in the Universe." The theory is not well received with the leading scientists of France and of this country, who claim that his statement of astronomical facts is incorrect and his conclusions, therefore, illogical, and are entirely unworthy of the high scientific standing of the author. Mr. Russell says the new astronomy shows us that the sun is one of the central orbs of a star-cluster which occupies the nearly central position in the exact plane of the Milky Way and is very near, if not actually at, the center of the whole visible and probably the whole material universe. The position of the earth in relation to the solar system is central and unique in its adaptability for organic life, and draws from these facts the hypothesis that scientifically considered the supreme end and purpose of this vast universe was the production and development of the living soul in the perishable body of man. If the universe is a manifestation of mind, the orderly development of living souls supplies an adequate reason why such a universe should have been called into existence, and as we ourselves are its sole and sufficient result, and that nowhere else than near the central position of the universe which we occupy could that result have been attained.

A NEW SOURCE OF HEAT AND POWER.

THE question was asked during the recent coal famine, when the public fully realized how much of our comfort and industry depended upon coal, "What shall we do for heat and power when our coal fields are exhausted?" Go back to first principles, said one, and utilize the electricity of the atmosphere through the water power now so much wasted or the direct rays of the sun concentrated, as has been found thoroughly practical in Egypt and in the Eastern deserts, but the most startling reply and yet outlining what has proved in his hands thoroughly practical, was that of John A. Montgomery, of Williamsport, Pennsylvania. Burn water he said. That it can be done I have fully demonstrated before many friends. The feasibility and correctness of my invention is only waiting for the necessary patents before it is placed upon the markets. Then it will be found that my little device, perfectly simple in

its construction, will change the water conducted to it through a pipe into a medium of intense heat at a much cheaper and more effective rate than is now produced by coal. Mr. Montgomery is seventy-eight years old and was a warm friend of Prof. Morse, and furnished him as one of his first inventions with the switch now used in his telegraphic system. All of his inventions, more than thirty in number, are very practical, have contributed much to the comfort and prosperity of the country and millions of dollars to the various industries with which they have been identified. The recent invention has occupied much of Mr. Montgomery's thoughts. The fact which he learned in his early studies in chemistry that the combustion of one part of oxygen with two parts of hydrogen produced a perfect and intense heat, and that these elements combined in this proportion formed water, started in his mind the thought that it would be possible to separate these two elements in water into a combustible gas, and thus produce a cheaper and more perfect source of heat than is now obtained from coal. After thirty-five years, during which period this invention has occupied much of his thoughts, complete success, he thinks, has crowned his labors. In these days of startling revelations in science, when the wants of the community seem to be fully met with the unfolding of natural laws, we are prepared to believe almost any revelation, especially when coming from so distinguished an inventor as Mr. Montgomery.

ABOLITION OF THE OFFICE OF CORONER.

THE bill of Senator Elsberg to abolish the office of coroner in this city has led to an examination which shows how the duties of the office could be filled by present officials much more satisfactorily and with greater efficiency and safety to the public than at present. It has been shown that the coroner is a sort of fifth coach-wheel costing a great deal of money and accomplishing nothing which could not much better be done without it. The duties of coroner should be relegated to the Health Department and the District Attorney and the office of coroner abolished. If this were done the duties would be performed by trained officials under proper scientific and legal direction and there would be fewer mistakes and a quicker and much more satisfactory solution of matters to be adjudicated.

—According to the Springfield (Mass.) *Republican*, a singular difference has long shown itself between New York and Pennsylvania in the number of their insane. With a population less than two millions, or 30 per cent., Greater New York has now some 28,000 insane, of whom, last October, 24,992 were in public and private hospitals and asylums. Pennsylvania, judging by her official reports (Lunacy Committee of the Board of Charities) has less than half as many insane, of whom, a year ago last October, only 11,748 were in hospitals and asylums. By this time, at the usual rate of increase, this would be some 12,100.

BIBLIOGRAPHICAL.

A LABORATORY TEXT-BOOK OF EMBRYOLOGY. By Charles Sedgwick Minot, LL.D., D.Sc., Professor of Histology and Human Embryology in the Harvard Medical School. With two hundred and eighteen illustrations, chiefly original. Philadelphia: P. Blakiston's Son & Co., 1903. 380 pp. Large octavo. Price, $4.50.

This work, intended primarily for the use of the laboratory, will be found of great service to any one interested in the subject of which it treats. The high standing of the author as a teacher and as an authority upon this subject, places the book in the very front rank as a text-book. The profuse illustrations are mostly original, and many of them are from the superb collection at Harvard, without which, the author says, this work could not have been undertaken.

The text is classically written and interestingly stated, so that a naturally dry subject becomes even fascinating.

The book has an assured position from the start. Physically, the work is a fine specimen.

THE DEVELOPMENT OF THE HUMAN BODY: A MANUAL OF HUMAN EMBRYOLOGY. By J. Playfair McMurrich, A.M., Ph.D., Professor of Anatomy in the University of Michigan. With two hundred and seventy illustrations. Philadelphia: P. Blakiston's Son & Co., 1902. 527 pp. 12mo. Price, $3.

This manual constitutes an attempt by the author to present in concise form for the student the development of the human body and a foundation for the proper understanding of the facts of anatomy. Recourse has also been had to the facts of comparative anatomy as affording indications of the historical development or evolution of the parts under consideration. The text is clearly stated, well illustrated, and there is no doubt as to the value of the book for the purpose intended.

CLINICAL TREATISES ON THE PATHOLOGY AND THERAPY OF DISORDERS OF METABOLISM AND NUTRITION. By Dr. Carl von Noorden, Senior Physician to the City Hospital in Frankfurt. Authorized American Edition, translated under the direction of Boardman Reed, M.D. Part I Obesity: The Indications for Reduction Cures. Part II Nephritis. Part III Membranous Catarrh of the Intestines. Price, $2. New York: E. B. Treat & Co., 1903.

These most instructive and interesting little books should be in the hands of every practitioner of internal medicine.

The author is not only one of the highest in this department of science, but he is in the front rank of progress when he says: "The physician who does not wish to treat his patients according to old-established routine practice, and who does not feel satisfied with prescribing in a purely superficial manner, so-called 'expectant treatment,' will consider it his duty, and will make it a general guiding principle in the treatment of his cases never to advise therapeutic measures of any kind without having first decided to what extent they are justified, and what results may be expected from them." This advice is in the line of individualization, which not only makes the practice of medicine more interesting, but promotes the best interests of the patient as well. Tradition is as nothing to this author, unless its truth can be absolutely demonstrated. The treatment of the subjects is fascinating, and his statements respecting the dietetics of

Bright's disease have often been confirmed by the writer. Our readers will make no mistake in possessing the books, which are inexpensive.

THE PREVENTION OF DISEASE. Translated from the German, with an introduction by H. Timbrell Bulstrode, M.A., M.D., Cantab. D. P. H. Medical Department of H. M. Local Government Board, Lecturer on Public Health in the Medical School of Charing Cross Hospital, Honorary Secretary and Member of Council of the Epidemiological Society of London, etc. In two octavo volumes. 1063 pp. New York: Funk & Wagnalls Company, 1903.

The title of this work of many authors, cannot fail to attract the attention of a wide circle, not only including physicians, but also all those who are interested in the public health, although the subject is not restricted to infectious diseases. The work is addressed mainly to the general medical practitioner, in order to promote his interest and knowledge in the prophylaxis of a great variety of causes. Its object is the development of individual prophylaxis, and no one knows better than the physician how important this is, and so far as we know, it is the first attempt to view human disease in its entirety from the standpoint of preventive medicine, in the more comprehensive sense of the term.

Professor Martins contributes an admirable chapter on general prophylaxis, Professor Mendelsohn one on the prevention of diseases of the heart, in which he considers functional as well as organic lesions. It is an effort toward individualization, such as is rapidly progressing in every department of medicine and science, and is to be encouraged by the true scientist in every walk of life. It would be difficult in these few lines to give the precise scope of this voluminous undertaking, as it must be read to be appreciated. It is the very foundation of public health.

DISEASES OF THE STOMACH: A TEXT-BOOK FOR PRACTITIONERS AND STUDENTS. By Max Einhorn, M.D., Professor in Clinical Medicine at the New York Post-Graduate Medical School and Hospital; Visiting Physician to the German Dispensary. Third Revised Edition. New York: William Wood & Company, 1903. 534 pp. Octavo.

The urgent demand for this work, which has forced it to a third edition so soon, shows with what favor it has been received by the profession. The present edition has been entirely revised and quite a few additions made to the text.

The author possesses the excellent quality of condensation, so that he is able to state a great deal in an adequate manner in a little space. The book has been written with the interest of the general practitioner, as well as the specialist, constantly in mind, and the latest views as to diet and treatment are concisely and practically stated, so that the busy practitioner may read while he runs.

The important subject of which this book treats is fast becoming appreciated by the all-around physician, and this is one of the books which he must have if he would keep abreast the times in this most momentous subject.

The publisher has done his part in his usual excellent way.

SURGICAL ANATOMY; a treatise on Human Anatomy in its application to the Practice of Medicine and Surgery. By John B. Deaver, M.D., Surgeon-in-Chief to the German Hospital, Philadelphia. Vol. III. P. Blakiston's Son & Co, Philadelphia, 1903.

The publishers are well warranted in the slight delay in issuing the last volume of this great work, for as it stands now it is a great achievement and reflects honor and credit on the author and the American Medical profession generally. This third and last volume treats of the anatomy of the abdomen, pelvic cavity, lymphatics of the abdomen and pelvic thorax and lower extremity. Nothing in medical literature has heretofore equalled the magnificient plates which adorn this work particularly when they were made from actual dissections of selected cadavers. Surgeons will be particularly interested in the anatomy of the gall-bladder and bile ducts which subject is very clearly demonstrated and which is particularly interesting now that so much work is done in that region. The careful study of the lymphatics with reference to malignant disease is engrossing much attention and on this subject, too, the illustrations are secondary only to an actual dissection on a good cadaver. Other departments are equally good, these are selected as showing the trend of surgical investigation. The text is clean, forcible, lucid and what we might call business-like, just as an eminently practical surgeon like Dr. Deaver might write. There is no confusion of stilted expressions but clean cut and forcible English, interspersed with surgical allusions which always makes a work on anatomy doubly interesting. It would be manifestly unfair not to award great praise and thanks to the publishers for the magnificent way they have clothed Dr. Deaver's work. Illustrations, paper, type and binding are all of the best materials assembled with excellent taste and artistic workmanship. W. T. H.

HOW TO SUCCEED AS A PHYSICIAN, published by the Church Publishing Co. of Meriden, Conn., is a little volume of heart-to-heart talks of a successful physician with his brother practitioners. The author's story, which is told in an exceedingly pleasant manner, is full of telling facts and practical suggestions for a profession the most self-denying, and the worst business-men in the world. This book will form a pleasant addition to every medical library.

THE INTERNATIONAL MEDICAL ANNUAL. A Year-Book of Treatment and Practitioners' Index. 1903. Twenty-first year. New York: E. B. Treat & Co.

The year-book has been so long before the public and has reflected with such truth the progress of the year that it has received the warmest commendations of an immense clientele. Scientific facts, the progress of the medical world, and the conclusions of its ablest writers have been condensed and presented so clearly as to be easily grasped by every one. It is only necessary to say that this volume is fully up to the high standard maintained through twenty-one years of publication.

A SYSTEM OF PHYSIOLOGIC THERAPEUTICS. A Practical Exposition of the Methods other than Drug Giving Useful in the Prevention of Diseases and the Treatment of the Sick. Edited by Solomon Solis Cohen, A.M., M.D. Vol. 5.

This volume is by Drs. Joseph McFarland, Henry Leffman, Albert Abrams, W. Wayne Babcock, and is devoted to Prophylaxis, Personal Hygiene, Civic Hygiene and Care of the Sick. It is an epitome of what is essentially the Natural History of Medicine; including the important facts thus far learned regarding the origin, dissemination, and prevention of disease. The importance of the subject, the thoroughness of the work and the special clearness and timeliness of the study of immunity assures for this volume a more than generous welcome from the medical profession of this country. The present work is a practical contribution in support of the opinion

that the subjects of Prophylaxis, and of treatment should not be divorced in teaching, study, or thought. The common principles underlying the prevention of disease and the management of the sick; the dependence of these upon the forces at work in producing natural immunity and natural recovery; the influence of evolutionary processes upon all the phenomena considered; and the essentially vital nature of both morbid and recuperative action are made evident by the facts here brought together and arranged according to a definite system of programme exposition.

THE DUCTLESS GLANDS.

We know of no work relating to medical science published for many years which contains so much originality of thought, minute and painstaking investigation as that now passing through the press of F. A. Davis & Co. by Dr. Charles E. De M. Sarjous on the "Internal Secretions and the Principles of Medicine." If the conclusions reached by Dr. Sarjous in an almost unexplored field of physiology are confirmed by the concensus of scientific minds, they will prove of far reaching value in Therapeutics and rank among the greatest discoveries in Physiology and the Science of Medicine. Dr. Sarjous has been for many years known to the public as a scientist of marked ability, with clear and well-defined ideas, but his name for the past 14 years has been more intimately connected with the "Annual Analytical Cyclopædia of Practical Medicine" as its founder and editor. In reviewing the prevailing doctrines covering the nature of vital processes particularly in respect to the physiological chemistry of chemical metabolism and tissue respiration, Dr. Sarjous found it impossible to trace the oxygen through its sojourn in the tissues and sought the solution of the problem so important from a medical standpoint, among the subjects which have never been associated with this physiological function. Investigations showed that the supra-renal glands whose use had never been discovered possess a most important function. These "ductless glands" secrete a substance which is carried directly to the lungs, where it takes up oxygen, for which it has a strong affinity, forming a new substance, to which Dr. Sarjous gives the name of Adrenoxin. This substance mixed with the blood and travelling through every part of the system even to the smallest capillaries through various plasma channels many of which have hitherto not been recognized, supplies the tissues with oxygen, a function which has hitherto been credited to the red globules of blood. An oxidation ferment has been found in the plasma by previous observers, called "glycolytic ferment," which is identical with Dr. Sarjous' Adrenoxin. The adrenal or suprarenal glands, instead of being rudimentary organs, as was supposed, may be considered as the key not only to tissue respiration, but also to the functions of all other organs now classed as "ductless glands." And even these developments assumed a secondary position, says Dr. Sarjous, when it became evident that the better known organs such as the heart, lungs, liver, etc., were to say subsidiary structures, the instruments, in a measure of the smaller ductless glands and destined to fulfil their mandate. Dr. Sarjous found the supra-renal glands or adrenals are connected through the solar plexus, the splanchnic nerves and the cervico-thoracic ganglia of the sympathetic, with a small organ in the brain known as the anterior pituitary body, the functions of which have hitherto been unknown. He says that the anterior pituitary body is really the governing centre of the supra-renal glands; that in this way it regulates the amount of oxygen taken into the blood. Weak vitality means poor oxidation of the tissues, so that a weak anterior pituitary body implies a weak vitality. The anterior pituitary he thinks is the organ on which disease producing and even all poisons act. Some poisons stimulate it, others depress it. When a disease poison stimulates it the effect is to increase the intake of oxygen into the blood. This means increased combustion, the symptoms of which we call fever and increased combustion tends to destroy the poison. A strong anterior pituitary body, therefore, may give a man all that is necessary to overcome disease germs. Dr. Sarjou thinks that what we have called vitality is simply pituitary efficiency. This efficiency he found to a certain extent depends upon the thyroid glands whose physiological purpose is to sustain the function efficiency of the anterior pituitary body up to a certain standard by means of its secretion: iodine in organic combination. The thyroid gland, the anterior pituitary, and the adrenals are functionally united, forming an autonomous system which he termed the adrenal system. Dr. Sarjous thinks that he has shown that the adrenal system is the source of the secretion which, with the oxygen of the air, forms the oxidizing susbstance of the blood plasma and has also revealed the origin and mode of distribution of the bodies with which the oxygen directly or indirectly combines, to insure the continuation of life and the efficiency of all organic functions. In addition to these agencies he has suggested that all leucocytes and under certain circumstances the plasma contain a protective agency, trypsin, which with Mechnikoff's phagocytic cell, serves to destroy micro-organism and convert their toxins and other albuminoid poisons into harmless products; considered jointly these various factors represent the aggregate of vital phenomena. Special pharmacodynamics and physiological pathology, both subdivisions of Applied Therapeutics, will be considered in the second volume which will appear a few months after the present one.

CARE AND FEEDING OF CHILDREN. A Catechism for the Use of Mothers' and Children's Nurses. By L. Emmet Holt, M.D., LL.D. Third Edition, revised and enlarged. D. Appleton & Company, 1903.

The instructions in this little book are so clear and comprehensive that it should be introduced into every nursery as a text-book by the advice of the family physician.

RING WORM AND BARBERS' ITCH.

Notwithstanding all the refinements of pharmacy of recent years we very often go back to the remedies of our mothers as most effectual in certain diseases. In the old New England farmhouse, camphor and goose grease were considered the standard remedies and were found in every farm house. The goose grease was freely used in colds, inflammation of the throat and a certain class of eruptions. Dr. Jackson has found it combined with the crystals of iodine, one drachm to the ounce, a most effective remedy for ring worm. It has been the leading remedy for this disease in the Vanderbilt Clinic for many years and we have used it during all our professional life with better results than any other remedy. Dr. Jackson says it is to be applied twice a day until it produces reaction as shown by a little swelling of the patch, then once a day will be sufficient. In two or three weeks the hair falls out but soon grows again when the cure is complete. In the very few cases which will not yield to this treatement, Dr. Jackson has found good results from an ointment composed of from half a drachm to a drachm of croton oil to the ounce of sulphur ointment applied the same as the goose grease and iodine.

CORRESPONDENCE.

THE "FOOT AND MOUTH DISEASE": SLAUGHTER OF THE INNOCENTS.

To the Editors of THE MEDICAL TIMES:

In an article on "Catching Cold" in the *Popular Science Monthly* for January, 1884, the present writer remarked that "man is the only animal whose living habits are so unnatural and filth-producing as to demand the constant companionship of a nose-rag, since it is not considered good form to copy the small boy's coat-sleeve tactics." The wild animals, in their native haunts, have practically no disease. Their eyes are bright and clear; noses are clean, the nasal mucous membrane naturally moist, but never overflowing; mouths are clean and teeth last as long as life endures, and with no occasion for the aid of a dentist; feet remain sound and last a life-time without shoeing.

In face of bitter cold and scant feed they become gaunt and even emaciated; but, short of actual starvation and freezing, they continue strong and fleet, and, in brief, they present a picture quite the reverse of our stall-fed beeves, and cows "driven," *i.e.*, crammed with food, to produce an abnormal flow of milk, regardless of the influence on health of a pampered, sedentary and self-indulgent life, as we would put it in case of human beings.

"I fatten my cattle," said an intelligent and observing young farmer, "because it *pays;* the market demands fat creatures; so I have my barns very snug and warm, and I feed high. My neighbor, on the other hand, is what is called a 'poor farmer;' his buildings are not of the best; his barns have broad cracks all around, giving his cattle pure air, and they are never fat. He works his oxen hard, gives them enough food to keep them in full health and vigor, but nothing for adipose. Mornings, in winter, when he turns his oxen out into the yard, they prance out like a lot of colts, kick up their heels and shake their horns like healthy creatures as they are; while mine will almost tumble down over the door-sill! His cows never give as much milk nor make as much butter as mine; but they are never sick, while mine are sometimes, and I lose one now and then with 'milk-fever,' or some other disease resulting from over-feeding and lack of exercise. But I am farming for profit, and my heifers bring an extra price by reason of the great milk and butter record of their mothers, and I can afford to have a sick cow and even a dead one occasionally, providing I conceal the fact—not advertising the danger of the process necessary to 'drive the milk out of them.'"

Here we have, as it seems to my mind, the whole secret of the "foot and mouth disease," viz., too much put into the *mouth*, and not enough exercise on *foot;* hence the inevitable progress of *disease* and the liability, at any time, of its outcome in the shape of *sickness*, which, for either the higher or lower animals, is nature's means of "curing" disease, so to say: the organism begins the work of elimination. In truth, as it seems to me, in each individual case of the sickness under consideration, it should be considered that the victim is beginning to *get rid* of the disease that has been for months or years creeping up on him, instead of his having "caught" it from his fellow sufferers, each and every one of whom—why not?—could as well generate it *de nouvo* as did the first victim of it. It is a matter of common knowledge that some men, women and children, as well as all the wild animals in condition, are immune from all the so-called contagious or infectious diseases, except in case of direct inoculation; and some individuals seem proof against this, even, as we note instances in which vaccination doesn't "take." And, again, cases are far from rare in which several "successful vaccinations" have been had, and smallpox, even of the worst type, has followed; and this, even, when there seemed no conceivable way in which it could have arisen, except from the victim's personal ill-condition, no other cases being known in the community, and the sufferer not having been away from home. Naturally enough, the more closely one is confined indoors, and the more unwholesome his living-habits, as to diet, dress, quality or freshness of the air breathed, the more likely he is to be brought to book with any one of the filth-diseases. Because a disease like the "foot and mouth," or smallpox, or "grip," becomes epidemic, there seems to my mind no reason for assuming that any one has caught it from any other; like causes produce like effects, and when we know that ten cows, or ten thousand, or a million, are treated in a way to promote disease, in a way, indeed, to make disease inevitable, the only question being as to the form of illness, and how long before it must appear; when we know that these creatures are all treated practically alike, why should we, in the name of contagion, slaughter millions of dollars worth of fine cattle, and cause serious loss to their owners, instead of learning the truth as to the cause of the disease, its curability, and the only means of prevention. We cannot clearly explain why it is that the disease is ever absent, nor why or how it happens to prevail as an "epidemic." Doubtless the atmospheric conditions have an influence in stimulating the animal organism to begin the *curative process*, which the unscientific mind confounds with the *disease*.

CHAS. E. PAGE, M.D.

Boston, April, 1903.

THE MEDICAL PROFESSION ON ALCOHOL.

To the Editors of THE MEDICAL TIMES:

Three times during the last half century medical manifestoes have been issued giving the opinion of physicians on alcohol. The first was issued in 1839, and was signed by 86 persons. The second in 1847, and was signed by 2,000 physicians, and the third appeared in 1871, with the signatures of over 4,000 physicians, including the names of many leading physicians in all parts of the world. A fourth declaration of opinions is now being circulated for signatures, and reads as follows:

The following statement has been agreed upon by the Council of the British Medical Temperance Association, the American Medical Temperance Association, the Society of Medical Abstainers in Germany, and leading physicians in England and on the continent. The purpose of this is to have a general agreement of opinions of all prominent physicians in civilized countries concerning the dangers from alcohol, and in this way give support to the efforts made to check and prevent the evils from this source.

In view of the terrible evils which have resulted from the consumption of alcohol, evils which in many parts of the world are rapidly increasing, we, members of the medical profession, feel it to be our duty, as being in some sense the guardians of the public health, to speak plainly of the nature of alcohol, and of the injury to the individual and the danger to the community which arise from the prevalent use of intoxicating liquors as beverages.

We think it ought to be known by all that:

1. Experiments have demonstrated that even a small quantity of alcoholic liquor, either immediately or after

a short time, prevents perfect mental action, and interferes with the function of the cells and tissues of the body, impairing self-control by producing progressive paralysis of the judgment and of the will, and having other markedly injurious effects. Hence, alcohol must be regarded as a poison, and ought not to be classed among foods.

2. Observation establishes the fact that a moderate use of alcoholic liquors, continued over a number of years, produces a gradual deterioration of the tissues of the body, and hastens the changes which old age brings, thus increasing the average liability to disease (especially to infectious disease), and shortening the duration of life.

3. Total abstainers, other conditions being similar, can perform more work, possess greater powers of endurance, have on the average less sickness, and recover more quickly than non-abstainers, especially from infectious diseases, while they altogether escape diseases specially caused by alcohol.

4. All the bodily functions of a man, as of every other animal, are best performed in the absence of alcohol, and any supposed experience to the contrary is founded on delusion, a result of the action of alcohol on the nerve centers.

5. Further, alcohol tends to produce in the offspring of drinkers an unstable nervous system, lowering them mentally, morally, and physically. Thus deterioration of the race threatens us, and this is likely to be greatly accelerated by the alarming increase of drinking among women, who have hitherto been little addicted to this vice. Since the mothers of the coming generation are thus involved the importance and danger of this increase cannot be exaggerated.

Seeing, then, that the common use of alcoholic beverages is always and everywhere followed, sooner or later, by moral, physical, and social results of a most serious and threatening character, and that it is the cause, direct or indirect, of a very large proportion of the poverty, suffering, vice, crime, lunacy, disease, and death, not only in the case of those who take such beverages, but in the case of others who are unavoidably associated with them, we feel warranted, nay, compelled to urge the general adoption of total abstinence from all intoxicating liquors as beverages as the surest, simplest, and quickest method of removing the evils which necessarily result from their use. Such a course is not only universally safe, but is also natural.

We believe that such an era of health, happiness, and prosperity would be inaugurated thereby that many of the social problems of the present age would be solved.

This declaration has already received the signatures of over 1,000 physicians in all parts of the country. I have been appointed chairman to present this manifesto to American physicians for their endorsement. I should be very glad to receive the name, title and address of any physician who is willing to aid by his signature to correct public sentiment and assist in the prevention of one of the great evils of the age. This is purely a scientific effort for the purpose of having a general concensus of opinion of the leading physicians of the world, and it is assumed that American physicians are equally enthusiastic and prompt to lend their signatures to this statement as in the wine-drinking countries of Europe. A postal card with address and title is earnestly solicited from every medical man who would like to be represented in this great movement for a clearer comprehension of the subject. Address,

T. D. CROTHERS, Hartford, Conn.

RETROSPECTIVE THERAPEUTICS.

Anusol in the Treatment of Hemorrhoids.—John Moir, L.R.C.P. and L.R.C.S., Edin., (*The Therapist*, June 14, 1902) says that in the treatment of patients suffering from piles, whether the tumors are newly formed or chronic in character, whether large or small, even up to large venous knots hanging from the rectum, and at times bleeding profusely, the medical man has found himself, as a rule, very much handicapped, owing to the want of any thoroughly reliable method of procuring an early and lasting cessation of the pain and an ultimate total disappearance of the disease, and also of obtaining at all times during the treatment a soft and painless stool. In January, 1899, the writer became acquainted with Anusol Suppositories, in which, he says, we have practically a specific for hemorrhoids, and various other diseased conditions of the rectal mucous membrane.

Women, when pregnant, and after parturition, are often troubled with constipation, piles and painful defecation, for which anusol has been repeatedly found of the greatest service.

In another obstinate and frequently intractable complaint, the oxyuris vermicularis of children, and of adults also, and in pruritus vaginæ, anusol suppositories generally effect a radical cure. In sores too, of the external skin, whether of infants or adults, in intertrigo and prurigo, rubbed into the affected parts the suppository is an infallible remedy.

After giving an account of some cases in which permanent cures have been effected by this remedy, Dr. Moir concludes: "The entire question of the treatment of hemorrhoids can be summed up in one sentence: procure regular passages from the bowels." This object can be thoroughly attained by the regular, systematic use of anusol suppositories. In the event of a threatened relapse, the further use of two or three of the anusol suppositories will prevent its occurrence.

Treatment of Cold in the Head.—The hydropathic treatment of a cold in the head is more reliable than any other, and one which scarcely requires the aid of a physician. It is as follows: In the morning, after rising, and at night before retiring, wash the feet and legs as high up as the knees in cold water, then rub them with a rough towel and massage them till the skin is red and glowing. In addition to this cautiously snuff tepid water up the nose frequently during the day, and sip with a teaspoon a glassful as hot as can be borne an hour before each meal and at bedtime. A few days is often quite sufficient for simple cases, and obstinate ones yield if the treatment is prolonged. No medicines are required. If taken in the first stages of the disease a cold is broken up which might otherwise become a severe case of bronchitis, lasting many days or weeks.

Balloon Ascensions for Anemics.—A rather novel therapeutic procedure has been brought forth by a Paris physician. Dr. Naugier, in a paper which he recently read before the Académie de Médécine, claimed that balloon ascensions had a marked effect in increasing the number of red blood-corpuscles in patients who were anemic, and that this condition will persist for nearly 10 days after the ascension. Five such ascensions in the course of six or seven weeks, he said, are more beneficial to an anemic than a sojourn of three months in the mountains. The good effect begins to be felt almost immediately, and a lengthened stay in the air is of no value, and in the case of many is actually detrimental by causing irritation. Should Naugier's claims be substantiated, balloon ascensions will form a cheap and

pleasant method of treatment, especially for those who are unable to afford a change of climate.

The Early Diagnosis of Paresis.—F. X. Dercum, writing upon the early recognition of paresis in the April number of the *American Journal of Insanity* (*Med. Age*), at once recognizes the peculiar difficulties of the problem, because of the general disturbance which in the average case precedes by a long time the appearance of the special symptoms denoting organic change. The patient, though easily fatigued, yet fails to present the fatigue so characteristic of the neurasthenic state.

The neurasthenic relates a long list of symptoms entirely subjective in character. The paretic rarely comes of his own volition, and his friends tell of his symptoms: it is they who suspect his illness, not the paretic himself. The neurasthenic is changed little or not at all in appearance. The neurasthenic, after a night of disturbed sleep, gets up exhausted and depressed, and is often not at his best until evening. The paretic, on the other hand, though insomnia, dreams, or disturbed sleep may have been his portion, is usually at his best in the morning, being drowsy and with other symptoms toward evening. Qualitative mental changes noticeable in the paretic are absent in the neurasthenic. In the paretic are noted inability to fix the attention and a distaste for his usual work, irritability displayed on trifling occasions, proneness to forget changes in habit, deficiencies in conduct, and a general dulling of the finer senses. The neurasthenic knows and observes the ordinary proprieties. The paretic early, easily, and habitually disregards them. Distinction between early paresis and alcoholism is often more difficult.

The Obstetrical Aspects of Idiocy.—William Gillespie (*Cincinnati Lancet-Clinic*) considers the following conclusions justified by his investigations: The more frequent use of forceps with the object of preventing asphyxia, will tend to decrease the percentage of idiots in the general population. Some cases of congenital deafness are due to injury during parturition, and the percentage can, no doubt, be lessened by the rational management of labor. In children who have inherited a neurotic tendency, idiocy may follow an injury which would not have had such serious consequences in one that was descended from more stable stock. It is imperative that obstetricians not only study carefully the conditions which call for the use of the forceps, but that they acquire the skill and judgment necessary for their applicatoin, for there can be no doubt that in exceptional cases injury from forceps may cause mental defect or infantile cerebral palsy. Their judicious use, however, constitutes our best preventive treatment.

Teaching Phlebotomy.—Dr. Thomas Manley (New York State Med. Soc.) said that unfortunately venesection has fallen into a desuetude that is not entirely innocuous. Very often physicians hesitate to perform venesection because they have never seen the operation done. It is humiliating to see the recent graduates of even distinguished medical schools blunder around in trying to open a vein in the patient's arm. There should be a distinct teaching of the method and technic of phlebotomy, since there are certain conditions in which the operation must be done, and when needed as a rule there should be no hesitation about its employment, since the conditions in which it does good are serious and delay is dangerous.

Oil Extermination of Mosquitoes Useless.—Dr. T. W. Dupree, who has been making investigations upon mosquitoes, has reported to the Louisiana Society of Naturalists that the eggs of mosquitoes are often hatched months after they are laid, especially if deposited in ponds which subsequently dry up. He concludes that the extermination of mosquitoes by oil or by otherwise treating ponds during March and April, when the eggs are supposed to be hatching, would be useless, as the hatching is going on all the time.

RETROSPECTIVE DIETETICS.

Hygiene and Diet in Typhoid Fever.—Prof. G. Rauzier (*Montpelier Méd.*, July 13, 1902; quoted in *Gaz. des Hôp.* of Aug. 12) lays down the hygienic indications in typhoid fever as: (1) To shun food which might irritate the intestinal ulcers; (2) to keep the abdomen free and favor diuresis; (3) to keep up the patient's strength; (4) to prevent transmission of the disease. The method of fulfilling these indications is: (1) To put the patient in a large, airy room, without carpet or other unnecessary furniture, cover him lightly, and keep the room semi-darkened and still. (2) Use tepid baths, 32°C., and wrap the patient tightly in a blanket after he is removed from the water, taking care to fold up the legs separately in a part of the covering and to put a square of flannel in each axilla. Use a night shirt open at the back. (3) Clean the mouth twice a day with a bit of lemon and wash the teeth and tongue carefully. (4) Clean the large intestine twice a day with a liter of boiled water. (5) Use a strictly liquid diet while the fever lasts, giving every two hours alternately a bowl of milk and one of soup or meat juice or clear chocolate. Have all drinks either warm or at the temperature of the room. Wine and water, liquors and water, weak tea and coffee (with a spoonful of rum to each cup), light beer, or decoctions of cereals may be allowed in the intervals between the food. (6) If albumin appears in the urine put the patient on an absolute milk diet. (7) Change the position of the patient from time to time to avoid hypostatic congestion and bed-sores. (8) Use extreme caution during convalescence, and only permit a stew on the third day following complete apyrexia. Allow a cutlet on the eighth day and permit him to sit up the day after the first cutlet is eaten.

Physiological Action of Alcohol.—That alcohol is not a stimulant, but a decided depressant upon circulation, is the result obtained by J. Swientochowski (*Zeitsch. klin. Med.*, Vol. 46, nos. 1 to 4; *Med. News*). In this respect it does not differ in its effects upon other organs, for the apparent cerebral irritation is only a sign of beginning paralysis of the psychomotor centers which exerted inhibition. So also the increased physical activity and tendency to overcome fatigue result from gradual dulling of the muscular sense. In the stomach the digestive secretion may be first increased, but soon ceases almost entirely. The fact that animals inoculated with the germ of tetanus possess less resistance if alcohol is administered proves a deleterious influence upon general metabolisms. The ethereal ingredients of the better alcohols are no less harmful, since an expensive cognac was found to depress as much as a far cheaper grade. These observations will tend to considerably narrow the sphere of usefulness of alcohol in disease, especially as heart stimulant.

Is Water a Food?—In a paper read before the American Pharmaceutical Association in September, 1902 (*Med. Rec.*), Mr. John Uri Lloyd makes a plea for the recognition of water as something more than a mere solvent—in fact, as an integral and necessary constituent of the tissue elements, and of foods: The question is, has the water that is used in the making of a soup, by the action of heat, simply dissolved certain salts and tissues, or has it combined with organic constituents in a way that will make a nourishing liquid

or a series of water combinations, in which water exists, it is true, but with altered qualities? In other words, has the foodstuff been partially hydrated *en route*—been partially pre-digested, so to speak? Water being a "saturated" molecule, no one would, of course, maintain that by and in itself it is a food. But Mr. Lloyd's contention that foods are foods only by reason of chemically -combined water has considerable plausibility. Two questions are present, that of availability, and that of food value proper—that is, the amount of energy contained. The latter is evidently not affected by the present question. But availability may be dependent upon the fact and degree of hydration. For example, if grape sugar $C_6H_{12}O_6$, be treated with strong sulphuric acid, it gives up all its hydrogen and oxygen in the form of six molecules of water, and there remains a spongy mass of carbon, valueless as food. Similarly, it may be that many of the organic compounds are not the same, either chemically or physiologically, after more or less water has been subtracted from them. On the whole, therefore, Mr. Lloyd's paper is an interesting and suggestive one from the standpoint of dietetics.

The Relation Between Appetite and Digestion.—Dr. Romme, in *Le Revue* for August, 1902 (*Med. Rec.*), describes some experiments recently undertaken by Professor Pawlow for the purpose of investigating as to the digestibility of various kinds of food. According to the writer, these experiments showed that the offering to a specially "prepared" dog of food which he liked caused an abundant secretion of gastric juice, although nothing had entered the stomach. If he were offered a tid-bit, the flow of gastric juice was much more abundant than if he were given food which he merely liked, showing that appetite is needed to set the gastric juices working properly. Thus Pawlow's experiments have proved that when eating without appetite the food was either not digested at all or very badly digested.

The investigator also says that he has shown that the brain transmits its orders to the stomach by means of two pneumogastric nerves. These nerves were cut on a "prepared" dog. Then the dog was given raw meat which did not reach the stomach. No gastric juice whatever was secreted, and no method of mechanical excitement produced juice. And, further, if bread or cooked white of egg were introduced into the stomach, the dog being unconscious that such was the case, the food remained for hours without causing the least secretion of gastric juice. But after administering extract of meat or milk first, the secretion would be provoked. The conclusions which Dr. Romme draws from the foregoing experiments are that in the poorer classes a man lives far more from his muscles than from his brain, hence the desire for food. It is rather a healthy sign to be somewhat greedy. The reason that dyspepsia is so common among men of letters and the like is that their brain is so much occupied with their work that they eat without thinking of the food taken. The pneumogastric nerves have not been called into action, and in consequence the gastric juice is badly secreted. It is therefore not conducive to good digestion to be absorbed in a book or newspaper at meals.

In the case of consumptives with little or no appetite, and insane persons who refuse food, the gastric juice may be set in motion by taking milk or broth an hour or so before a meal.

Diet in Chronic Diarrhea.—Boardman Reed (*Intern. Med. Mag.*, Oct., 1902) says: The diet in chronic diarrhea needs to be most carefully studied, for it is a difficult problem often to nourish the patient sufficiently without permitting a greater variety of aliment than can be safely taken. Milk in some of its forms can usually be made to agree, and we may allow well-cooked rice, freshly toasted bread, zwieback (if not too hard), or other partly dextrinized starch food, though sometimes good home-made stale bread agrees quite as well.

In many cases soft boiled or raw eggs are borne well, and in nearly all, the white of eggs. Baked white potatoes and some of the vegetable purees may be cautiously tried in the less severe cases, and often buttered stale bread can be added.

In certain cases in which there is very excessive fermentation, beginning in the stomach, and yet sufficient gastric juice or the possibility of supplementing it well enough by administering hydrochloric acid and pepsin, the most satisfactory basis of the diet at first—for say three or four weeks—is finely chopped beef, with a free use of hot water still further to stimulate the secretion of the digestive glands. Give with these only two or three slices of stale or toasted bread daily and a very small amount of asparagus, spinach, or lettuce as a relish, gradually adding more carbohydrates and fats as they are found to be tolerated.

In some of the worst cases the diet may have to be limited for a while to peptonized milk or other predigested foods, such as Eskay's Food, etc., and in others, Plasmon, with the help of some one of the meat powders, answers best.

The foods which are most likely to aggravate diarrhea are first of all the raw fruits, next the cooked fruits, especially when sweetened, and third the crude succulent vegetables. In some cases no vegetables can be made to agree. Sugar in any form, as well as hot or fresh yeast bread, and the shell fish, are badly borne as a rule. Milk will occasionally increase diarrhea, though it is less likely to do so if boiled, sterilized, or peptonized, and even soft-boiled eggs are not always well digested by these patients.

The suitability of a diet must be judged by its effects upon the frequency of the stools and the amount of fermentation as shown by the stomach contents and feces, as well as by the amount of indican and aromatic sulphates in the urine.

The Dietetic Treatment of Granular Kidney.—By Dr. C. Von Noorden (*Brit. Med. Jour.*, Nov. 1, 1902). Among the interesting points brought out by the author are the following: When the albuminoid substances in the diet of patients suffering from granular kidney are slowly increased, it is found that they secrete with ease quantities of nitrogen amounting to less than 15 grammes for 70 kilograms of body weight. But when the amount of nitrogen to be daily excreted exceeds 15 per cent., then the elimination becomes irregular and uncertain. Animal tissues rich in nucleins should not be allowed, as uric acid is not always readily eliminated. The kidneys make no distinction between the albumens of meat, fish, eggs, milk and vegetables. Further, the difference in extractives contained in white and red meat is too trifling to deserve the attention hitherto given to the subject. The author, contrary to the usual custom, restricts the amount of fluid taken by the patient. By inundating the vascular system with the water we increase the work of the heart. Not more than three pints of water should be allowed in the 24 hours. The patient should have plenty of strengthening food, but on no consideration should he be overfed. And whenever his weight must be reduced, this must be effected in the most cautious manner. Carlsbad cures are utterly unsuitable.

GLEANINGS.

Plastic Operation for Restoration of the Sphincter Ani, with Report of Case.—Under this heading, Chas. H. Chetworth, in the *Medical Record*, describes a very ingenious method for restoration of this necessary muscle. The *modus operandi* in the case cited consisted in raising a semi-circular flap, extending from the coccyx to either side as far as a line drawn between the tuberosities of the ischium, thus exposing the lower part of the rectum and the edges of the glutei muscles. Thin strips one-fourth inch wide by one-sixteenth inch thick were dissected on each side from these muscles, attachments being left above. The strips were then made to encircle the gut, the right-hand fibers going to the left side and the left-hand fibers to the right, being fastened together in front of the anus with catgut. The operation was eminently successful and complete control of the bowel contents resulted.

Fallacy of Insusceptibility to Vaccination.—The chief medical inspector of Chicago, Dr. Spaulding (*Bull. of Chicago Health Dept.*), says: "It should be clearly understood that no one is insusceptible to vaccinia or vaccination any more than to smallpox. One successful vaccination can be secured in every person; to this there is no exception.

"A few weeks ago a reputable physician wrote to the Department that he and two other doctors had vaccinated his little girl seven times without result, and asked that the child be permitted to enter school without a certificate, as he believed she was not susceptible to vaccination. He was advised to try again with vaccine lymph furnished by the Department. He did so, and has since written that the child has a typical vaccination which insures her immunity from smallpox. If this eighth trial had not been made the story would have gone out that it was a case of insusceptibility—a condition that does not exist—and if she had been subsequently attacked with smallpox, it would be claimed that she had been vaccinated, and the case cited by the anti-vaccinists as proof of the inutility of vaccination as a preventive of smallpox.

"A hideous illustration of the evils of teaching insusceptibility to vaccination was furnished during the week in the neighboring town of Hammond, in which a cashier in the bank was stricken with smallpox in its worst form. He died on the seventh day of the attack with hemorrhagic smallpox. He had had four attempts at vaccination, and because it did not "take" was told he was insusceptible—a bit of medical advice which cost him his life at the age of thirty-three—an utterly needless loss of a life useful to the community and of priceless value to his family."

The Unreliability of the Microscope in the Diagnosis of Malignant Diseases—G. Hamilton Whiteford (*Brit. Med. Chi-Jour.*) says that he has seen the value of the microscope repeatedly and extensively tested in the diagnosis of all the more common varieties of malignant tumor. The result has been a series of shocks to his previously firmly-rooted belief, and he now holds that the microscope for purposes of differential diagnosis is perfectly unreliable. Hamilton of Aberdeen has shown microscopic sections of the tongue of persons over fifty-five years of age which present an appearance identical with that seen in epithelioma. He placed side by side with them sections of clinical epithelioma, and the most expert pathologists were unable to distinguish between the two. The author considers the naked-eye appearances and the clinical history of a case to be much more reliable than the microscopic appearances.

Eddyism in the Sixteenth Century.—"Until it is learned that generation rests on no sexual basis, let marriage continue." (*Science and Health, with Key to the Scriptures*, one hundredth edition, 1896, p. 274). The *New York Medical Journal*, after quoting this passage, asks whether, if Mrs. Eddy had lived in the sixteenth century she would have endorsed the following decree of the Parliament of Grenoble, February 13, 1537, or would she, like most of us, have "winked the other eye?"

"Considering the evidence, showing that it is more than four years since the said Lord of Aiguemère has carnally known the said lady of Auvermont; considering the defense of the said lady, declaring that, although she has not carnally known her husband, yet having imagined in a dream the person and contact of the said Lord of Aiguemère, she experienced the same sensations of conception and pregnancy that she might have received in his presence, and affirming that, since the absence of her husband for four years, she has never had intercourse with any man, and that she has nevertheless conceived and borne the said Emmanuel, which she believes to have come about by the force of her imagination; considering the deposition of the Ladies of Albriche, of Pontrinel, of Orgeval, etc., affirming that such an accident may happen to women; that such things have happened to themselves and that they have conceived children of which they have been happily delivered, which resulted from certain imaginary intercourse with their absent husbands, and not from copulation; considering the attestation of the midwives and of the physicians; the Court decrees that the said Emmanuel is and shall be declared the legitimate and true heir of the aforesaid Lord of Aiguemère, and charges the appellant to hold the said Lady of Auvermont as his wife in estate and honor." (*Gazette de Gynecologie*, Sept. 15, citing the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux.*)

There were 677 less deaths recorded, and a lowered death-rate of 1.21 points per thousand was noted in this city in the fourth quarter of the year 1902, as compared with the corresponding quarter of the year 1901; the one feature of this decrease standing out more prominently than any other was the number of deaths from the communicable diseases, all of which showed a considerable decrease, with one exception: typhoid fever, to which 44 more deaths were attributed than in the last quarter of the year 1901; and if the decrease of 40 deaths from malarial fevers be placed at the side of this increase, the questions naturally arise, was this decrease in malarial fevers due to more accurate diagnoses, thereby placing these deaths among those from typhoid fever, or were the official and individual efforts aimed at the extermination of the *malariæ plasmodium*-conveying mosquito, productive of such immediately beneficial results? The decreases noted among the communicable diseases were as follows: measles, 105; malarial fevers, 26; smallpox, 26; scarlet fever, 31; diphtheria and croup, 20; tuberculosis of the lungs, 36. There were 352 fewer deaths attributed to pneumonia; and to diarrheal diseases under two years, 126; the only noteworthy increases were 122 deaths from violence—21 of which were attributed to suicide, and 95 to accident, and 116 deaths from congenital debility.

MISCELLANY.

—Mortality is two and a half times greater in the tropics than it is throughout Europe.

—In the University of Berne, Switzerland, there are 252 women enrolled in the medical department and but 199 men. Almost all the women students are Russians.

—A chair of colonial medicine has been established in the University of Bordeaux, France, and Marseilles has been made the seat of a military school of colonial medicine.

—A Dutch hotel keeper in the Transvaal clarifies the muddy water of the district in the following way: half a dozen dried peach kernels are slightly cracked and thrown into a large butt of water. In an hour or two the muddiest water will be found beautifully clear.

—General anesthesia is said to have been in use among the Chinese as early as the tenth century. This they effected by inducing absorption of certain narcotic substances, the base of which was opium, aconite, etc. The subject was awakened by causing him to drink salt and water. The application of general anesthesia was, however, limited, as operations were few.

—The Berlin Academy of Science has announced that its academic prize of 5,000 marks will be awarded, in 1904, for an investigation of the cathode rays, and in 1905 for an investigation of the theory of function of several variables which admit of linear substitution. The income of the Cothemus legacy—$2,000—for 1904, will be awarded for investigations of new varieties of grain. The papers may be written in English, and must be presented, without the name of the author, to the bureau of the Academy, Universitaetstrasse, 8, Berlin.

—Hungarian dentists and chemists claim to have discovered a valuable local anesthetic, an alkaloid, nervocidine, the hydrochloride of which is stated to have similar properties to cocaine, but to produce a much more lasting anesthesia. The base is obtained from an Indian plant, (Gasu Basu), the properties of the leaves of which were first discovered by D. Dalma, who successfully employed them in painful pulpitis with such good results that he reported that the drug might displace arsenic for dental purposes.

—Persons suffering from delirium tremens usually imagine that they are surrounded by snakes. An explanation of this hallucination is offered by the result of some recent French experiments. Sixteen alcoholic patients were examined with the ophthalmoscope, and it was found that the minute blood vessels in the retina of their eyes were congested. In this condition they appear black, and are projected into the field of vision, where their movements resemble the squirming of serpents.

—There have of late been many additions made to the number of vegetarian eating-houses in Germany. So largely have these increased that, whereas so recently as 10 years ago places of the class were only to be met with in a few towns of the country, they are now to be found in all parts of it; and, what is more, they are said to be proving very profitable, though the prices charged at the generality of them are even more moderate than those demanded at similar establishments in England. There are many resorts of the kind where complete and, at least so far as quantity is concerned, exceedingly satisfactory dinners are served at 8 cents per head.

—By making a hole through a piece of paper or postal card with a pin, moving the pin a few times round the hole to give it a smooth edge, holding the pin-hole close to the eye, and looking at printed or other matter held at the normal reading distance, there is perfect definition, and any one who requires glasses to read can with this device read anything. When a pin hole is held to both eyes at the same time, there is a great improvement over one, with perfect binocular effect. The field of view is much smaller than that seen when glasses are used. There is less light and no magnification. The importance and utility of this simple device in many circumstances are obvious.

—In Paris there are, according to the *Lancet*, 2,600 medical practitioners. Of these, 40 have a gross income of from $40,000 to $60,000, 50 of $20,000, 50 from $10,000 to $20,000, 200 from $6,000 to $10,000, 200 from $4,000 to $6,000, and 1,700 earn on an average $725 a year. In the whole of France there are 1,600 physicians who gain on an average $550 a year gross.

—Surgeon-General Wyman, in a recent interview, made the following statement: "I do not believe that there is more disease this year than usual. The difference is that in these days of rapid transmission of news we hear more of the ills of our distant neighbors than formerly, which makes it appear that the world is in the grasp of pestilence. We now hear almost instantly of an outbreak of a scourge where formerly all would be silence."

—Dr. Myron P. Denton and Dr. George M. Creevey have been appointed to Bellevue and Dr. Samuel J. Kopetzky to Harlem hospitals as expert anesthetists. The Board of Trustees has made this important departure in order to ensure the administration of anesthetics in the most approved manner, as well as to provide for the practical instruction of the incoming members of the house-staff in the selection of anesthetics for individual cases, and the best methods of administration. As soon as qualified anesthetists are secured appointments will be made to Gouverneur and Fordham Hospitals.

—The Third International Congress of Thalassotherapy will be held at Biarritz on April 19-21, 1903. The following are the subjects for set discussions at this congress: (1) "What is the effect upon the processes of metabolism of a sojourn at the seashore?" (2) "What are the effects of marine therapy as regards the generalization of tuberculosis?" (3) "What is the influence upon the cardiovascular apparatus of a stay at the seashore and of Thalassotherapy in general?" Membership in the congress is open to all interested in the subject of marine therapy who register and pay a subscription of 10 francs. The latter may be sent to the treasurer, M. Raynaud of Biarritz. Further information may be obtained by addressing the foreign secretary, Dr. J. Seguel, 68 Boulevard Malesherbes, Paris.

—A reviewer in the *Journal of Mental Science*, referring to a decrease in the insane of Great Britain and Ireland during the last two or three years, asks to what cause it can be attributed. In searching for an answer he concludes that it must be something that has equally affected the three divisions of the United Kingdom. This something, he thinks, must be the South African war, which has undoubtedly been occupying the public thought more almost than anything else. He considers that it has been exerting a tonic and bracing effect upon the mental constitution of the British race. He also points out that the same influence was noted in the United States during the American war of 1861, and in France in 1870. He concludes, however, "that this effect of the war is unlikely to prove other than temporary, but if it is productive of even a temporary steadying of the mental and moral character of the nation it will not have been in vain."

ORIGINAL ARTICLES.

WHAT KILLS THE SURGICAL PATIENT—1, ANESTHESIA; 2, SHOCK; 3, HEMORRHAGE; 4, NEPHRITIS; 5, PERITONITIS; 6, EMBOLUS; 7, PNEUMONIA?

BYRON ROBINSON, B. S., M. D., CHICAGO.

DEATH following an operation is a black eye to surgery. It sets the people in an unreasonable opposition to operations. It injures the operator. It induces the community to avoid successful and necessary operations. Who are to blame in this matter? The surgeon or the people? To prove this let us briefly view the incidents accompanying surgical operations.

1. *The Anaesthesia.*

What patients die of primary anesthesia? 1. The emergency case; 2, the case chronically ill and exhausted; 3, the subject with some definite visceral lesion. The golden rule in surgery is to prepare any patient as perfectly as possible before anesthesia. It is the rushing surgery that is disastrous. In fifteen years I have had two die on the operating table, one was an emergency abdominal case with unilateral pneumonia. The case was not properly prepared by irrigation of the stomach and the patient vomited a large amount of gastric contents which passed into the trachea, smothering or drowning him. It was our fault we did not properly prepare him. We should have irrigated the stomach. The second death on the operating table was in a subject with a twelve or fifteen-pound myosarcoma of the uterus. This case was well prepared, but the well known sarcomatous distribution had exhausted her. This was the patient's fault in not securing an operation sooner. The primary anesthetic deaths are rare but sufficient in large cities with newspaper announcements to be a significant factor for the consideration of the people—it is detrimental to surgery inducing unreasonable delays. Secondary damage from anesthesia belongs to nephritis. An empty stomach is a sine qua non for anesthesia. It requires much training to give anesthetics skillfully.

2. *Shock.*

Shock arises from two factors, viz., (a) anesthesia, (b) the trauma of operation. Shock affects chiefly the sympathetic system. It is due to the extent of an operation and its duration. Deliberately slow operating in serous cavities borders on the criminal. Tait's success was rapid execution. I operated on the abdominal viscera of 200 dogs in all conceivable conditions and methods, and it is evident that visceral exposure and visceral trauma are the mother of shock. *Emergency* operations have a disastrous fatal record. Emergency subjects cannot be properly prepared and consequently being unprepared, are sensibly manifest to shock. During the past six weeks in two small hospitals I observed four cases rushed into hospitals by general surgeons. Three were in the hospital on an average of thirty minutes previous to operation, consequently unprepared. The fourth case arrived at the hospital at 8 p. m. and was operated on twelve hours later. All four died within forty-eight hours. From what—shock. Only one of them needed an emergency operation—the one with strangulated hernia, and the multiple trauma produced on the intestines induced shock and death. One case had, as proved by operation, a simple catarrhal appendicitis and died in forty hours—shock. One case, a working housewife fifty-four years old, fell from a chair in the forenoon and some eight hours later was rushed into the hospital by four general practitioners and general surgeons. When the patient arrived at the hospital she had a *pulse of seventy-four per minute*, but was immediately anesthetised, and as the general surgeon remarked, he would "pull the whole business out to examine," meaning he would eviscerate. Absolute negative visceral findings was the result. She promptly died in eighteen hours—shock. In three of these cases the blame of death almost absolutely rested on the surgeon. It was no preparation or unnecessary operation. The four deaths were distinctly due to *shock*.

How many times do we hear that *"the patient never came out of the operation?"* Unskilled work, slow progress, unnecessary visceral trauma from rude and multiple manipulations shocked the patient to death. One of my colleagues, a general surgeon, required three hours to amputate a breast, when it should have been accomplished at leisure in thirty minutes. The patient promptly died within forty hours. The good surgeon earnestly asked my opinion as to cause of death, and I answered him in italics, *shock*. It is the avoidable death that stings the conscience of a good surgeon. Many deaths now occurring in hospitals and private houses from shock could be avoided by two to four days' preparation. Every visceral tract should be drained, evacuated, so that at the time of operating they will be at the highest point of resistance. If the patient is acutely ill in the abdomen, I have for twelve years, as Tait did, put them to rest and keep food from them. They are in excellent condition for operation in three to six days from physiological and anatomic rest.

It is rare the past decade to lose a patient from hemorrhage. The slipping of a ligature or clamp or secondary hemorrhage will, however, arise.

5. *Peritonitis.*

Peritonitis is one of the fell destroyers of the human race and still kills many patients after operation. Thorough preparation saves many deaths from peritonitis. With an empty tractus intestinalis, which is a quiet one, the sepsis is not widely distributed by vigorous peristalsis.

6. *Nephritis.*

Deaths from nephritis after surgical operations are much more numerous than is popularly supposed. It occurs as primary or secondary. Primary nephritis following an operation is generally a rapid disaster ending inside of five days. Of course, it con-

sists of an exacerbation of a chronic nephritis. The urine should be examined once daily for three days preceding the abdominal section. The patient should drink eight ounces of half normal salt solution six times daily for three days previous to the operation; this clears the urine like spring water, eliminating waste laden blood. The nephritis is generally supposed to be due to the anaesthetic, but doubtless the shock and burden of the operation, on an already exhausted subject, has much to do with it. Patients with long standing, and especially if large, uterine myomata are prone to nephritis following an operation. Secondary nephritis, especially from ether, arises some six months after the operation. I have noted such unfortunate cases so frequently that I have practically abandoned ether for chloroform. Thorough preparation by ample drainage, eight ounces of half normal salt solution every two hours, would wonderfully fortify the kidneys against nephritis after operation.

6. Embolus.

Death from embolus is much more freqent than is noted by the physicians who do no autopsies. Many sudden deaths after abdominal surgery are due to embolus. Seventeen days after I had performed a hysterectomy I was examining a patient, having bent the thigh on the abdomen, when she screamed with pain and inability to get breath. She died in forty-seven minutes. I secured an autopsy and found that repeated showers and accumulation of pulmonary emboli from a thromb-phlebitic ovarian vein had killed her. I operated on a case of strangulated hernia of two days' standing. Six hours after the operation the nurse sat counting the pulse, which was 84 per minute, when suddenly the patient's eyes made some peculiar rolling movements and he was dead inside of 3 minutes; that no doubt was an embolus, perhaps near the cardiac center, for the pulse ceased immediately.

Dr. Lucy Waite had a patient come into the hospital with a few chills during a week. She suspected an abortion and simply dilated the uterine neck under an anesthetic; no curetement was done, as the endometrium was smooth. She had a few subsequent light chills. Finally a heavy chill and death in an hour. Dr. Waite diagnosed pulmonary embolus. She secured an autopsy, which I performed, and found the pulmonary artery almost entirely obstructed by emboli, and I think the one that killed her was due to a long floating one which rolled upon itself. I once aspirated a few ounces of reddish serum from the chest of a young woman who had suppurating pleuritis of the opposite side. Three hours later she died suddenly, dying in about one minute. The breathing ceased as one breath. That was an embolus in the respiratory center. No one can foresee an embolus but those who do surgery tractus intestinalis in the region of the superior and inferior mesenteric veins (as hernia, hemorrhoids, appendicitis), or in the region of the plexus pampiniformis (as operation on the tractus genitalis) will note death from floating blood clots all too frequent. To be able to diagnose patients with embolus one must do autopsies. A nonseptic embolus may become a nonseptic thrombus in the lungs and recovery occur. Some years ago I assisted Dr. Lucy Waite to perform an operation on a chronic perirectal abscess. The patient, a woman, twenty-five years old, improved excellently until the fourth day, when she turned acutely yellow and died in about three days. This was a septic embolus floated to the liver, producing septic hepatitis. I once resected a portion of a rib from a man with chronic suppurating pleuritis. A pint of pus was evacuated. He recovered excellently until the fourth day, when he told me there was some pain in the wound. I was sitting by the bed talking to him when suddenly his eyes became set, rolled irregularly, and he died in less than two minutes. That was an embolus in the respiratory center, for he suddenly stopped breathing.

7. Pneumonia.

At rare intervals one notes a death in abdominal section from pneumonia. This is attributable to the anesthetic or to the lodging of a septic embolus in the lungs. I once assisted a pupil of mine to operate on a case of hemorrhoids. The patient took septic pneumonia from septic emboli, arising in the inferior mesenteric veins. Hundreds of small abscesses bedecked her body from the showers of septic emboli. I once saw death from pneumonia on the sixth day follow an abdominal hysterectomy.

The base of surgery is diagnosis, which includes ability to prognose the patient's resistance. Successful surgery depends on thorough preparation of patients. The avoidable death is the black spot on the surgeon's escutcheon.

INTERESTING COMPLICATIONS IN TYPHOID FEVER.

BY T. F. HALE, M.D.

PERIPHERAL Neuritis. Gower's theory that the neuritis occurring in typhoid fever is of local origin, being due to pressure or stretching of the affected nerve at a time when its nutrition is defective may be a potent factor in certain cases but not in all. Undoubtedly evidence is not wanting which shows that the neuritis may be due to a poison conveyed by means of the blood to the affected nerves, for even where the chief functional disabilities are confined to one nerve, there are frequently slight indications of a more widely distributed disorder.

Dr. Bury of Manchester, England, has given us as clear a division of this subject as any writer but it seems to be generally overlooked. According to this authority, the paralysis is usually partial in extent and degree.

1. It may affect the whole of both lower limbs or one limb either upper or lower; but as a rule it is limited to certan muscles or groups of muscles and often is strictly confined to the territory of a particular nerve.

2. The muscles are wasted as well as weak and when tested with electricity show the partial or complete reaction of degeneration; in some cases contractures of muscles are mentioned but it is to be observed that they are found not in well nourished more or less rigid limbs but in those where some of the muscles were distinctly atrophied.

3. The paralysis is almost invariably preceded or accompanied by some form of sensory disturbance; thus the patient suffers from intense pain, continuous, re-

mittent, fixed or radiating or he complains of numbness and tingling in the extremities which subsequently become paralysed. Anesthesia partial or complete is of frequent occurrence and like the paralysis which it usually precedes may be limited to the territory of a particular nerve.

4. During the course of typhoid fever, the knee-jerks as pointed out by Angel Money are commonly exaggerated and there may be ankle clonus. Gowers refers to excessive knee-jerk and foot clonus in association with paraplegic weakness in patients seen some months after the fever; but as a rule judging from the reports in which the reflexes are mentioned, paralysis of the lower limbs is associated with diminution or loss of the knee-jerks. The atrophic character of the paralysis testifies to a lesion in the lower segment of the motor tract; while probably in some cases it is the result of an anterior poliomyelitis, the presence of sensory disturbance in the vast majority of cases shows that the lesion if in the cord at all is not limited to the anterior horns or involves both roots or the peripheral nerves.

The Duration of Life of the Typhoid Bacillus in Typhoid Dejections. Karlinski has made exhaustive investigations on this subject which have not received the attention they deserve. He endeavored to determine the following points: (1) In what period of the disease can the bacilli be detected in the dejections? (2) Can the discovery of these in the feces be considered a diagnostic sign of the disease? (3) How long are the bacilli of typhoid fever capable of living? (4) How long can they live in the contents of drains and sewers. He made his investigations on 21 well-marked cases and he found that in not one of the 21 cases was he able to detect the microbes in the feces until the ninth day after the initial chill; they appeared at the time when the necrosis of the Peyer's patches begins. At first they are very few in number, but increase continually, and in cases where intestinal hemorrhage shows the high degree of severity which the ulceration has reached they become numerous. From the moment in which the temperature begins to fall, and the stools begin to be more solid, the number of the bacilli rapidly diminishes. In all of the 21 cases they had disappeared by the twenty-fourth day, and in some much sooner than this. In only one instance were they still present as late as the fiftieth day, and this fact was clearly due to the occurrence of a relapse. The discovery of the bacilli has some diagnostic value, especially in the case of children and in atypical cases. The author has found in this way that a peculiar endemic febrile disorder occurring extensively in Herzegovina, and which has been described by Pick as an independent disease, is only a very atypical form of typhoid fever.

Further investigations have shown: (1) That the typhoid bacilli will not continue to live in the typhoid stool more than three months. (2) That the keeping of them in different temperatures has no noteworthy effect on the duration of their existence. (3) That the presence in the stools of those rod bacteria which have the power of liquefying gelatine is very injurious to the typhoid bacilli, and causes their entire destruction after 10 to 16 days. The author found that in the absence of these bacteria the typhoid bacilli were capable of great increase of number in the typhoid stool. By the end of two months, however, the number had become small. Several very interesting experiments are detailed, made in the endeavor to determine the action of the bacilli under the most natural conditions, as in drains and the like.

Among the results obtained the author discovered that the foul liquid from privy-wells, sewers, and drains was always of a weakly acid reaction, and was very fatal to the typhoid bacilli, killing them within 48 hours; but he did not determine the relative part borne in this destruction by other microorganisms present, the products of decomposition, and the chemical composition of the foul fluid. He endeavored also to discover how long the typhoid bacilli would live in the solid and alkaline feces taken from a drain, as well as the influence of river water, rain water, urine, garden soil, river mud, and sun on them. The general conclusions upon which he ventures are the two: that the greater quantity of foul sewer-liquid, water, and of putrefactive microbes present, the more rapid is the destruction of the typhoid bacilli which have passed with the dejections into the sewer; and, secondly, that the duration of the life of the typhoid bacilli when mingled with the contents of the sewer is decidedly shorter than Uffelmann's investigations would seem to show.

The practical question arises in this connection as to a good disinfectant for feces; taking first corrosive sublimate, the only way to test this antiseptic is to mix it with feces and after a certain number of hours inoculate some culture medium from the mixture, find out whether it is sterile. Dr. Foot of the Yale Medical school made up a number of disinfecting liquids according to the following formulæ:

℞	Corros. subl.	ʒij.
	Water	C. i.
℞	Chloride of lime	ʒiv.
	Water	C. i.
℞	Sulphate of iron	ʒxviij.
	Water	C. i.
℞	Corros. subl.	ʒij.
	Tartaric acid	ʒx
	Water	C. i.
℞	Hydrochloric acid.... 1 per cent.	(ʒ x to C. i.)
℞	Corros. subl.	ʒij.
	Hydrochloric acid	ʒx
	Water	C. i.
℞	Carbolic acid ..... 5 per cent.	(ʒl to C. i.)
℞	Corros. subl.	ʒij.
	Potass. permang.	ʒij.
	Water	C. i.

For the test mixture Foot used normal feces mixed with two-thirds of their bulk of decomposing urine; this mixture was thoroughly stirred until it had the consistency of pea-soup. He added two hundred and fifty cubic centimetres of this mixture to five hundred cubic centimetres of the disinfectant in a glass battery jar and mixed up the whole with a glass-rod. Afterwards the mixture was poured into a sterilized flask plugged with sterilized cotton; at the end of an hour, four hours and forty-eight hours inoculations were made from this mixture into tubes of sterile beef bouillon and into tubes of nutrient gelatine. The tubes of beef bouillon were then placed in an incubator at a temperature of 104° F., and watch kept for the first sign of cloudiness which indicates the presence of bacteria; the gelatine tubes were immediately made into plates and kept at the temperature of the laboratory 70° F. The colonies which then developed were counted. As a result of a long series of experiments Foot came to the following conclusions:

The best disinfectants to use are the bichloride with hydrochloric acid, the bichloride with potassium permanganate, and the chloride of lime.

Five-per-cent. solutions of carbolic acid and two-tenths-per-cent. solutions of the bichloride are unreliable

even when used in the proportion of one pint to every 100 c.c. of dejection.

Emphasis needs to be laid on the necessity of thorough disintegration of the fecal matter by stirring with the disinfectant, and on the necessity of allowing the mixture to stand four hours at least before emptying.

For continued use the bichloride solutions would injure lead pipe, while if used for a few days only, probably no injury would result. For long-continued use, where the dejections are thrown into a water-closet, chloride of lime is undoubtedly the most available disinfectant.

Solutions of chloride of lime should be kept tightly corked and should not be used after they are one week old.

While all these experiments were performed with normal feces, there is little doubt that the disinfectants are of the same value in typhoid feces for the spores of the hay bacillus, which is found in normal feces are as resistant to the action of germicides as the most resistant pathogenic germs, and far more resistant than the bacillus typhosus and the comma bacillus, which are the common pathogenic bacilli found in the feces.

An interesting sidelight in these experiments was the deodorant power of the mixtures; sulphate of iron, which is often regarded as a good deodorant, developed an odor considerably more disagreeable than that of the mixture of feces with sterilized water. The odor did not seem to be lessened in any appreciable degree after seventy-two hours, when the flask was emptied. The bichloride and the mixtures of the bichloride with hydrochloric acid, tartaric acid, and potassium permanganate are primarily good deodorants. Thus at the end of four hours there was no appreciable odor from mixtures containing these. After forty-eight hours, however, a very sickening odor was developed in all these mixtures. This was not of putrefactive origin, since the mixtures were frequently perfectly sterile. Chloride of lime rapidly destroyed all fecal odor, but replaced it by its own. Carbolic acid also destroyed all fecal odor after four hours.

The Reduction of Fever in Typhoid Fever. Statistics in regard to this disease are apt to be a little misleading for, of course, a number of cases will get well with no more than dietetic treatment, while the type of the disease varies in different regions and at different seasons. Dr. Johnson of Washington has ably said, that "typhoid fever is admitted to be in its typical form a widely diffused disease, more nearly approaching a typical character and more commonly met with in this character in the non-malarial region; less typical and less common in the malarial regions, especially in the Gulf Coast region; but everywhere in this country certain typical symptoms, rose spots, diarrhea and delirium are less common than in the enteric fever of Europe. It is a generally accepted fact that there are large areas in America where typhoid fever is never seen in typical outlines.

This fact must be remembered in considering any line of treatment; for example, when Brand reports a series of cases in which by cold water bathing the mortality is reduced to 1.7 per cent., and yet under careful treatment no one gets this percentage in this country, we must reflect that the type of the disease must be milder. How far the temperature itself is injurious has been disputed; Welch kept animals for three weeks with an artificially induced pyrexia and yet they showed no lesions or symptoms of consequence. From this he believes that heart failure and disturbances of the sensorium are due less to higher temperature than to other factors; while other writers hold that fatty degeneration of the heart in typhoid fever is the result of disturbed nutrition and innervation rather than of mere increase in body-heat. When the antipyretic drugs were first introduced to the profession, it was hoped that they would be of great value. But it was soon seen that the depressing action upon the nervous and circulatory systems far outweighed the benefit of the reduction of the temperature. This fact gave fresh impetus to the Brand treatment in the past ten years. It is not a new idea; Brand himself had been using it for thirty years and yet it was not original with him. One hundred years ago Currie of England used cold baths to reduce temperature. Ziemssen's method in vogue twenty years ago, was as follows: The patient was placed into a tub of cool water at 85 or 90 degrees, and then ice was added until the temperature fell to 70 degrees; the patients were left in the water too long, so that they were taken out shivering and cyanosed, and often in a state of collapse. The secret of Brand's success was the sudden cold plunge rather than the gradual lowering of temperature and the *rubbing given in the bath.* In this way the cutaneous stimulation, the reflex action, and the arousal of the nervous and circulatory systems were all excellent. As a result the mind became clearer, the digestion improved, the heart became stronger and the respiration was stimulated. It acted as a general systemic and nervous tonic. It is also hard to get away from the results extending over long periods; some of them are as follows:

In the four years of the War of the Rebellion there were seventy-four thousand cases treated on the "expectant" plan, and the mortality was 35.6 per cent. In the following year the mortality reached 49 per cent. Jaccoud collected over eighty thousand cases treated on the "expectant" plan, with a mortality of 19.23 per cent. Ten years of "expectant" treatment among thirteen hundred and five cases in various New York hospitals gave a death-rate of between 20 per cent. and 30 per cent. (Delafield.) The following were also treated expectantly:

Murchison reported twenty-seven thousand cases with a death-rate of 17.45 per cent.

In nearly fourteen thousand London hospital cases the mortality was 17.8 per cent.

In Vienna seventeen thousand cases gave a mortality of 22.5 per cent.

For twenty years in the Pennsylvania Hospital the mortality was 19.5 per cent.

In New York city the Health Board reports seven thousand seven hundred and twelve cases occurring from 1876 to 1883, with a mortality of 41.28 per cent.

Two hundred and fifty cases treated at the Presbyterian Hospital, New York, from 1882 to 1890, gave a mortality of 16.1 per cent.

Five hundred and one cases treated at the New York Hospital, from 1877 to 1889, gave a mortality of 19.4 per cent.

On the other hand, Brand collected over nineteen thousand cases, treated by all kinds of cold baths, with a mortality of only 7.8 per cent. Many of these patients were first seen late in the disease, and were treated by sceptics in the Brand system. Brand also collected five thousand five hundred and seventy-three cases from twenty-three German and French sources which were more thoroughly and systematically bathed, and which showed a mortality of only 3.9 per cent.

Vogl, of Munich, has reported four hundred and

twenty-eight cases treated under the Brand method, with a mortality of 2.7 per cent. A series of twelve hundred and twenty-three cases under strict bath-treatment reported by Brand, Vogl, Jürgensen, and others, gives a mortality of only 1 per cent.

Inoculations against Typhoid Fever. This is a subject which has attracted but little attention in this country, while it has been thoroughly tried by the British during the Boer War. For example:

Cayley gives the results of the inoculation of the members of the staff and establishment of the Scottish National Red Cross Hospital, serving in South Africa against typhoid fever. The first section of the hospital, consisting of 61 persons, left Southampton on April 21, 1900. During the voyage out all except 4 of the personelle were inoculated twice at an interval of about 10 days. The injections were all made in the flank and were followed in from 2 to 10 hours by marked symptoms, both local and constitutional, that lasted for from 2 to 5 days. In many cases the symptoms were as severe after the second as after the first inoculation. This would seem to show that it takes more than 10 days before any immunity is established. Two of the 7 nurses were not inoculated, because they had already had attacks of typhoid fever, and 2 of the orderlies were only inoculated once. Out of about 300 troops on board, chiefly volunteers and militia, nearly 100 were inoculated. As soon as the hospital reached the Cape it was sent to Kronnstadt, in the Orange River Colony, and remained there as a stationary hospital until the middle of October.

During this period there were always many cases of typhoid fever under treatment in the hospital. Furthermore, some of the medical officers and student orderlies had charge of the Kronnstadt Hotel temporary hospital, which was crowded with enteric cases, and the nursing sisters did duty for 3 weeks in the military hospitals at Bloemfontein in May and June, when typhoid was at its worst. There was not a single case of typhoid fever among the personelle of this first section of the hospital.

The second section of the hospital, 82 in all, left Southampton in May, 1900. Nearly all were inoculated on board ship, but many were inoculated but once. The material for the inoculation had been on board for some time, and was not so fresh as in the first instance. Of this second section, one nurse had typhoid at Kronnstadt. She was the only one out of 36 nurses who had typhoid, and she was also the only one who had not been inoculated; 5 orderlies of the second section had typhoid, of whom 2 died. Of these 5, 2 had been inoculated once and 3 had not been inoculated. Of the 2 that died 1 had been inoculated once and 1 had not been inoculated. A third section of the hospital consisting of 20 people, went out in July; they were all inoculated and none of them had typhoid fever. At the end of August, the blood of a number of the staff and establishment was examined for the serum reaction. The blood of 23 of the members of the first section who had been inoculated 4 months before, was examined and of these 21 gave a good reaction and 2 gave a slight reaction, the orderlies who had been inoculated but once. The blood from the 22 members of the second section was tested, these had been inoculated for 3 months. Of these, 11 gave no reaction, 9 gave a very slight reaction, and only 2 gave a good reaction. It would appear from the above that the members of the first section were much more fully protected against typhoid than the members of the second section.

It is not quite clear why the inoculations of the first section were so much more effective than those of the second section. Probably the freshness of the material had an influence; and the author thinks that the dose for each individual was more carefully measured for the first than for the second section. So far as could be learned, the members of the first section suffered more severely at the time from both local and constitutional disturbances. The results above given seem to be very strong evidence in favor of the protective power of anti-typhoid inoculations, when they are very carefully performed, and they point to the necessity for 2 inoculations at suitable intervals. During the period of 5 months that the hospital was stationed at Kronnstadt, there were 92 admissions for enteric fever with 11 deaths. Of the 92 cases, 15 said that they had been inoculated. Of the 11 fatal cases, 1 occurred in a patient who had been inoculated once. The author fears that any statistics bearing on the question of the efficacy of the inoculations derived from the hospitals in South Africa, will not be of great value. At the same time he feels convinced that the attacks of typhoid fever were, as a rule, much milder in the inoculated than in the non-inoculated, and that the duration of the disease in the inoculated was shorter. It is strange if these conclusions are not more studied in this country.

TREATMENT OF MULTIPLE NEURITIS AND NEURALGIAS.

BY WM. WORMLEY, M.D.

OBSERVE a man's walk first; when he comes into your office look to notice whether there is anything strange or unusual in his walk. Take this case where the patient certainly has a stoppage gait on the one side. Now, let us see whether that stoppage gait occurs on both sides. I think that he has it on both sides but it is certainly more marked on the one side than on the other. Having made a preliminary observation of the case, let us see what we can learn from his personal history. His age is 40 years; his occupation that of a dyer. The main thing he complained about, is his walking. His foot hinders him from working as usual, but he cannot use his arm as usual. His history gives us no fact of importance, save that to some extent he has used alcohol: not at all within the past 10 days; but before that he did use it to some extent. There is no history of venereal infection; and no history of illnesses. He has been this way for about two weeks, and before that he was all right; he had some cramp in the foot, but no feeling of soreness. Now, from the history and symptoms what condition? Undoubtedly multiple neuritis due to alcohol poisoning. What is the prominent symptom in regard to multiple neuritis? Pain.

Test for this pain by pressure upon the small branches of the wrist; above you would test upon the nerve trunks; test over the terminal branches. Watch the patient's face and eyes while I squeeze the hands, and we see that he does not flinch. Now we will see what re-action we get with regard to the feet. Crossing the left leg over the right, we test to see to what extent the palsy of the foot is present. The patient tries to raise his toe upward, when we find dorsal flexion; he has foot drop; probably no power at all here. Testing the leg as we tested the forearms, we find that it does not flinch at all; there is no pain present; at least not in the left leg. On test, we find there is a little tendency to drop in the right foot, but not so marked as in the left, not quite up to normal. It is quite anomalous therefore that in this case we should have a marked palsy on the one side, and not upon the other;

because alcohol palsy is generally symmetrical, as much upon one side as upon the other. The extensors of the wrist are very strange; no palsy upon the right. In other words I fail to elicit wrist drop, a symptom which is so common a feature in alcoholic palsy. We will now go more into details. You noticed that at various times there was present faint twitchings or "fibre tremor," which is not so noticeable now as a few moments ago. Perhaps after a while we will be able to see them; they come and go, they are fugitive. This man presented another peculiarity. You will remember that in alcoholic multiple neuritis, we have loss of knee-jerk. The loss of the knee-jerk depends upon the extent to which the peripheral nerve trunks are affected. That knee-jerk is plus; the same in both. There is also a slight disappearing ankle clonus; a slight response upon the gastrocnemius muscle; more marked upon the right side than upon the left, which is probably never observed unless there is decided foot drop. There is in this man various muscular tremors; you see them now. The biceps reflex and the triceps are quite well preserved (tested by striking on the inside of the arm at the elbow); upon the left it is a little exaggerated. All the tendon reactions are either plus, or not as pronounced as they should be. Perhaps there is a mere suggestion of flattening and softness in the palmar surface of the hands. He also presents a very slight hyperesthesia of the right as well as of the left.

Now it is incumbent upon us to tell the difference between multiple neuritis and some other affection. In the case of a woman who had a case of primary atrophy, some time ago, the peripheral nerves underwent a form of degeneration, independent of any toxine that is taken into the system. Again, we know from autopsies made in cases of primary neural atrophy, that the changes are not limited to the peripheral nerve trunks; but that there is also some involvement of the spinal cord. In a large number of cases this involvement of the spinal cord is limited to the posterior columns; they are changes degenerative in character in the posterior columns as well as in the posterior nerves, which should be as marked in the lateral tracts as well, and then they must give plus knee-jerk. We will see if these signs are present in this case; plantar reflex is absent in this case, and of course, we cannot draw any conclusion from that. You know easily a palmar reflex is lost; it is lost very easily in infancy. In a child three months old the palm will shut down, when an object is put in the palm. Early in life the palmar reflex is lost; plantar reflex in this case therefore is absent. I bring the case before you because of the difficulty of the diagnosis. I have no doubt this man has really a neurotic atrophy. I am also convinced that his having taken alcohol to excess has favored this condition; has favored its development. It is probable that primary neurotic atrophy is due to some other cause. It may be an infection; it may be in some auto-toxine, or in the structures themselves. It is not at all improbable that in a man whose nerves are all gone, in case of using alcohol to excess, it will increase. If this case was purely a multiple neuritis, he would have marked symptoms on both sides; also marked pain. If you had knee-jerk, it would not be exaggerated.

The prognosis of alcoholic multiple neuritis is good; in primary atrophy, not good.

In this case we will insist upon total abstinence. We will also build up the nutrition. We will withdraw the poison he has been taking, and put him upon a milk diet. We will give him strychnia, iodide of potassium, corrosive sublimate in small doses, $^1/_{24}$ or $^1/_{32}$ gr. three times a day. Locally we will use massage and electricity, and keep alive the muscles, and keep up the nutrition as well as we can. The muscles have been fatigued, and therefore, we will see that this foot is not allowed to drag, which is done by the use of a rubber muscle, or, by a rubber band, which will keep the foot from dropping, or, have a steel spring in the sole of the shoe.

The differential diagnosis in peripheral palsy is not always easy. If I had been inclined to jump to conclusions, I should have come to the conclusion at once that this case is one of multiple neuritis. In a case of primary neural atrophy I cannot give any such as-
the attacks. It has been found in children who farm,
surance.

This next case is a boy eleven years old. The family history: Father has been well; mother is a healthy woman; no case of fits or convulsions in the family; no miscarriages; six children and they are healthy. This boy is the eldest, and he was healthy when a baby. Had scarlet fever; measles. This attack did not come on after a spell of sickness; had no fall. He had the first fit at the age of about four and one-half years. During the attack he did not know his father nor mother. He wet his clothing; but did not bite his tongue. He has had a number of spells in which the mother saw him. He is asleep when the attack comes on; the last was on last Tuesday night. Slept with his father, who found him in fit while in bed.

Now, gentlemen, what is the significance of attacks that come on during sleep as compared with attacks that come on during the day? In this boy we have an undoubted case of epilepsy. The history permits of no other conclusion. We have next to decide as to the nature of the epilepsy. The first thing that happens is that he falls down, and is dead for a time to the world, and then begins to work his arms and feet; sleeps about an hour or an hour and a half after the fit; then goes about as before. The attack is followed by a flushing of the face. In the absence of a head injury what shall be our treatment of the case? How are you going to treat this child to advantage? Treat the general condition. Bring the child's health up to as high a level as possible. Keep him in the open air as much as possible, which is an admirable treatment. Have him exercise vigorously daily, even without the administration of the bromides, which will diminish the frequency of or work, that they require comparatively little bromides in order to keep down the attacks. They should have as much exercise in the open air as possible. Engage in plays in which there is no risk; not with the bicycle, because of the danger of accident. Running, playing in the open field ball-playing, not climbing, of course; but general activity. Keep the skin active; keep the bowels open. One important practical point is that in case they become constipated, the tongue becomes coated, the frequency of the attacks or seizures are greater. If the bowels are constipated they will have more attacks. Now, what kind of food would you give to a case of this kind; do not give much nitrogenous food; but give milk, vegetables and fruit. Regular hours; go to sleep relatively early. Not necessary to rest these cases during the day. Give him neither coffee nor tea; no nervous stimulants. Child should be bathed and clothed properly; bathe daily, and gently rub after bath.

As to the medical treatment, the bromides are of value, but they will not cure; they will diminish the frequency. Bromide of sodium is good. Bromide of ammonium; but it does not agree in some cases as

well as the bromide of sodium; but when given for a long time it is better than bromide of sodium. The three bromides, the bromide of sodium, bromide of potassium and the bromide of ammonium, or the bromides with antipyrine. It is well to vary the combination when given for a long time; will get a better result. Antipyrine and antifebrine are good for the nervous system. When either of these drugs are given at the same time with the bromides, the bromide action is reënforced. The antipyrine may be given in 3, 4 or 5 grain doses. Antipyrine is dangerous when given in febrile cases. Dr. Clouston has given as high as 100 grs. in a day of bromide in cases of cerebral excitement, without injury. Guard against the bromide acne. Combination of arsenic in the form of Fowler's solution, with the bromides, is good; but do not give Fowler's solution too long, even in minute doses, because if you do you will get the yellowish pigmentation, which is as bad as the bromide acne. Other remedial agents is chloretone, given in 3, 5 or 8 grain doses, at bedtime, will inhibit attack for the following day. It is a sedative which is very slowly absorbed, and its action extends over many hours. Trional and sulfonal will do the same thing; but they are apt to be followed by stupor or quiet the following day. Do not dash off your favorite prescription of bromide in a routine way. Give full general instructions, and have them followed. It may be the case will recur, perhaps once in a year, in which case it amounts to a cure, because children can then go to school. I have never had a case to have an attack while in clinic, for a period of 20 years. It is probable the psychic excitement is the cause of this.

The next child is one of five children. One died soon ofter birth; one baby, the second summer cutting teeth; had no breaking out on the body. Mother had three miscarriages. This child's head drops backward; eyes are turned down; the eyelashes are not parallel. Child is eighteen months old; head very small for that age; anterior fontenelle is not closed, and it should be closed at this age. Natural inference from the fact of a small skull, is the brain is undeveloped. It is a case of arrested cerebral development. Here is the history of loss of children in infancy, which means a specific history. In the line of pathology, the conditions there are really a prevented growth. There are fibroid changes in the blood-vessels, in the membranes. This child has made no signs of physical discomfort at all; nothing to indicate pain. The probability is that the other children were not up to standard.

The next patient came here last week to be treated for a neuralgia of the scalp, from which he has suffered, with little if any relief, for over four weeks. Evidently, however, we have not to deal with a case of true neuralgia, for the pain is pretty generally diffused over the head and is by no means confined to any nerve. An instructive and interesting feature of the case is that very firm pressure to the head affords, so long as the pressure is continued, marked amelioration of pain. This fact indicated to me that if electricity was to do good it must be through the use of the faradic current. When the faradic current was applied, last week, it was found that the parts were most remarkably insensitive to the influence of this current. An amount sufficient to cause intense distress in a well person was scarcely felt. The relief afforded by the application, however, was very good, much greater than when pressure alone is tried, and he tells us that the pain has been far less ever since. In again applying the current, a strength equal to that applied last week when the intensity of the pain was greatest, is now painfully felt, although the patient even yet can endure without discomfort a far greater amount than ordinary. Electricity in a large number of just such cases, has done good for the parts will become more and more sensitive to the influence of the electric current until the normal is obtained.

A type of true neuralgia is seen in the next case where the pain is located in the fifth pair or nerves. The cheek is not swollen, but is quite as sensitive to pressure, which decidedly aggravates the pain. So accurately does the pain follow the course of the nerve that the patient can himself very readily map out the different branches. Electricity may not relieve this patient, but I believe it will. Of this one thing, however, I am sure: if benefit is to be derived from the use of this agent, it must be through the galvanic, and not through the faradic, current.

Hysterical neuralgia, and the so-called pseudo-neuralgias, are simply forms of pain occupying certain areas and running seemingly in the direction of certain nerves, invariably indicate the use of the faradic current, while true neuralgia is most successfully treated by galvanization. Pressure is a very efficient aid in differentiating between the two currents in the various forms of neuralgia. It is by no means an invariable law, but it will certainly be found that, in the great majority of cases of neuralgia, where firm pressure over the affected parts increases the pain the galvanic current is indicated, while the faradic has the greater power to relieve when such pressure does not cause an increase of pain. In hysterical hyperesthesia, it is well known that firm and prolonged pressure affords marked relief, while pressure superficially or lightly applied increases the pain. The faradic current is here infinitely superior to the galvanic. In some of these cases of excessive pain associated with anesthesia, like one of these cases before us, strong currents with coarse vibration seem to relieve even more than the finer currents.

The revulsive method of treatment by the faradic current consists in faradizing the skin. This is accomplished by applying either the solid metallic electrode or the metallic brush. The good following this harsh and painful method of treatment is thus explained: electrization of the sensitive nerves determines a more active flow of blood; and, as neuralgias are usually accompanied by modification in the capillary circulation, it follows that the augmentation and acceleration of the flow of blood may lead to the removal of the painful symptoms. It should not be forgotten that many neuralgias are developed along with diseases that are constitutional. Neurasthenic and hysterical patients and those suffering from other constitutional anomalies are frequently the victims of severe local neuralgias. In such cases it is useless to rely upon any form of local treatment, and general faradization and central galvanization often acts admirably in relieving local pains.

In neuralgia, as much perhaps as any symptom of disease with which we have to deal, the electrical treatment should at first be tentative. In the beginning mild currents only should be used.

In using a faradic current where the part affected is any part of the scalp, forehead, face, or neck, the use of the hand as an electrode is far more agreeable to the patient and is attended with better results than any form of artificial electrode. In those forms of neuralgia symptomatic in character, those that are associated with diseases of the brain and spinal cord, or severe peripheral nerve-lesions, and especially in that form of facial neuralgia known as "tic douloureux," electricity is of doubtful value, or at least only palliative.

feeling with its pleasures and pains? Where is feel-

Writer's cramp belongs to the class of functional neuroses sometimes termed professional hyperkinesis, and had always presented on its therapeutical side a difficult problem. "Writer's cramp" is perhaps the most common, although analogous conditions relating to other occupations—telegraphy, piano-playing, type-writing, sewing, etc.—are frequently met with. They all present the common feature that in certain complicated and delicate manipulations disturbances of movement occur which interfere with the manipulation in question or render it entirely impossible. Electrical treatment in these cases, while yielding results by no means entirely satisfactory, is far from being useless. It certainly more frequently does good than any other method of treatment. Electrical examination, as you observe, indicates no special change in the muscular reactions, but nerve-exhaustion is manifestly present, though whether mainly located in the peripheral part, in the spinal cord, basal ganglia, or cortex of the brain, we do not know.

Localized atrophy, neuritis, or anesthesia, are sometimes seen and these symptoms should receive local treatment, the faradic current being used for the first and last symptom and the galvanic for the neuritis. To obtain, however, the best results that electricity is capable of giving in these cases, the galvanic current must be applied to the brain, the spinal cord, and the sympathetic. The method of central galvanization, if carried out in all its fulness of detail, will answer all practical purposes. Asthma cannot be classed as a purely nervous affection, but there are many cases which are of neurotic origin and which indicate this origin by the readiness with which the symptoms are allayed by electrical treatment. Taking the cases of asthma as they successively come under our observation, the major part undoubtedly fail to receive any marked and permanent benefit by galvanic or faradic treatment, and for this reason it has been asserted that no good comes from such methods. I have always found more or less benefit accrue, more especially from applications of the galvanic current. It should always be remembered that the most efficient action of electricity is at the point of the recomposition of the current, *i.e.*, immediately underneath the electrodes; that the threads of current diverge widely and abruptly, and in order to submit the deeper-seated tissues to catalytic influences of any force, the external applications must be proportionately strong. Many who have used electricity for years are surprised when told that currents of 40 milliamperes have been sometimes used to the head, and even 60 and 70 to the neck.

Success depends upon the size and adaptation of the electrodes, and when they are of the right kind and properly adjusted, and the current is increased gradually and without interruption, the difficulty of applying a sufficient strength quickly resolves itself. Strong currents are, as a rule, indicated in asthmatic cases, and we generally fail to distinguish between the relievable and unrelievable forms if the treatment be not vigorously attempted, cases are occasionally met with which yield fair results under milder application. Here is a private patient of mine, a boy aged thirteen, who had a long time suffered from attacks of what I believed to be purely nervous asthma. Much medicine has been consumed and the advantage of change of climate has been tried but no satisfactory impression was made upon the disease until he submitted to electrical treatment. For two months he has received treatment almost daily, general faradization alternately with localized applications of the galvanic current. In using the galvanic current I use electrodes of sculptors' clay, applying usually the anode along the inner border of the sterno-cleido-mastoid muscle, and the cathode on the extreme upper portion of the spine, with a strength of only about 10 milliamperes. The attacks now annoy him but little, being exceedingly mild, and passing away almost immediately. In the beginning, when they were more violent, copious expectoration of a substance much resembling boiled rice or starch took place towards the close of each attack.

The interesting observation in connection with the application of electricity was that the treatment, when given at the beginning of an attack, invariably cut it short and hastened the inevitable mucous discharge. The faradic current may afford relief at times. On the theory that asthma is associated with nerve-irritation in the upper part of the respiratory tract, both Schaeffer and Bresgen claim to have relieved many cases through the faradic current, applying the electrodes on either side just below the angle of the lower jaw.

Muscles which have been paralyzed from cerebral lesion do not lose their faradic contractility. For example, I recall at this moment a man who has had his left arm and hand paralyzed from an injury to the brain occurring a year ago and his muscles still respond vigorously to the faradic current.

THE PHYSIOLOGY OF PAIN.

PART I.

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MR. H. tells me he can flex and extend his toes in the leg I amputated below the knee three years ago with nearly the same ease and feeling as in the other foot. At times he had a distinct pain in his foot. That he is frequently looking at the foot of the artificial limb to see if he can detect some motion therein. He feels that the artificial limb is a living functional member of his body. How can we account for this physiological and psychological fact?

With our present state of knowledge we are satisfied in stating an interesting and unusual fact in our experience, for we have no means of understanding its meaning with system, no method of analysis, even all our theories and hypotheses fail.

In this instance, as in every instance of obscure phenomena, the circulation of nervous energy in the nervous system comes to our relief, gives us the law or key for its solution with scientific system.

The pain, feeling and function he feels in the foot surely is not in the foot, for it was buried three years ago. He does not feel it in his stump is equally true. Where, then, is the feeling and pain located? He does not feel it in the brain. Indeed, he only feels it in the toes and foot, and we know that it was buried and has become fully disintegrated; and thus our reason and logic leads us to the conclusion that it is a scientific delusion, for the physical facts have no system of relation, and hence no possible method of interpretation. That it exists as an acute experimental fact thousands of similar cases is the evidence. What is true in this case must be a general principle of truth that must first be unfolded before we can analyze such a special truth with analytical detail.

The problem becomes resolved into: What is

ing with all its variations located? This man says he feels well, is without an ache or pain except the pain and feeling he has in the foot. That it is not in the foot is as certain as that it is in the foot to him and not in his body, but that fact that he experiences it in his body is positive evidence it exists therein. To state the facts of experience makes the problem very involved. Indeed, one must have a general knowledge of biology and psychology to follow the analysis, for it is the law or key of their solution. Your feeling is in the ship being wrecked upon the rocky shore by the storm, and yet it is all within yourself; it is no more in the ship than in this man's foot. The agonizing pain of your wife in labor that is your painful feeling with all its sympathies and emotions are all centered in your wife, but they are only in yourself. Your wife's pains are all within herself; her feeling and pain are locally felt, are centered around the tissues that surround the child. The pain is no more in the child and tissues of your wife than your painful feeling is in your wife.. It is as much in herself, although located in a part of self, as your pain is in yourself, although located outside. She feels her pain more acutely because more immediately and specially located.

In every instance pain is felt locally, either in the body or the world without, and yet it is always in the general life or equilibrium of the within that is the general feeling of life with its pleasures and pains. As your painful feeling is always local, so also are your feelings of pleasure and ideas. The smile by the baby causes your pleasurable feeling in the smile, but the smile is not a feeling. In the baby it is an expression of its feeling; in you a feeling of its expression. If it was a cry the system would be just the same, but the reaction different in the unity of relation.

The scenery is indeed wonderful, inspiring and beautiful, but this is all within, not in the ragged, jagged cliffs and chasms of the mountains. The rose is beautiful in your feeling, but it is not the feeling of the rose.. The physicist, scientist and geologist in his observation and study of Niagara Falls weaves its ponderous force and work, each in his special way, into organized states of ideal feeling, but it is purely within themselves, although located, have their source and being in the Niagara.

After having illustrated feeling with all its variations and relations from pleasure and ideal states to pain with the system of verifiable, every-day experience about which there is no doubt or question, the problem that comes up for solution is: What is feeling with its pleasures and pains? Our evidence demonstrates it is the general state of our bodily functions with its special system of reactions upon the world. If all our functions work in unison and harmony within and upon the without, we have a general state of diffuse good feeling. This is not only the measure and standard of our health and life with all its variations, the extreme relations we express by the terms of local or special feelings that is the system of relation to the general feeling of which it is a part, it is this unit of feeling that is the fundamental principle of psychology.

We have demonstrated that the physical system of relation is feeling with its variations as the same system, have followed the forces without into the states of feeling within with system, but we have not been able to follow our states of feeling with system into the system of forces without. We know it is a system, but we do not know the system. Physics has worked up into psychics, but psychics is still the unknown factor in the equation. Indeed, this is why we have so many enigmas, insolvable problems, examples of which we have purposely given to illustrate the extreme and contradictory relations in our experience. We have stated that the circulation of nervous energy is the law or key that gives us the solution. We will amend this by saying that it unfolds the physical system whereby we can demonstrate the law. It was by first casting the general law that the idea of a circulation of nervous energy came into being as a possibility.

What is feeling or psychics? We have just stated that feeling is the general state of our bodily functions. As the bodily functions vary in system, so do our states of feeling vary, for it is the unity of their relation. We have also shown that feeling is the ever-present equilibrium that is the measure of life. Then, what is this ever-present equilibrium? Where is it located?

As our feelings with all their variations from pleasure to pain are felt among the stars, in birds and flowers, home and family, in self that is a little organized world that reacts upon all the forces without and hence more acute, distinct and frequent, and all this in reality the general equilibrium of life, the functional relations of which are the measure of feeling with its variations, where is it located and what is the system of relation of this general feeling within to our special feelings in the without? That such a system exists is as certain as that these relations of feeling exist. But to state that the equilibrium of related functions is feeling with all its variations is only to state the idea or general conclusion, and while it gives us some system of its conception, it is only a theory working hypothesis. It is this idea that caused me to conceive the circulation of nervous energy in the nervous system that I have worked out into scientific and demonstrable detail, and by which briefly, along the line of general principles, I will endeavor not only to illustrate the truth of its existence, but show that it is the instrument whereby we demonstrate the world of psychics as the law and key for the solution of all these perplexing problems we have so far presented.

From all parts of the body, within and upon the surface, the special nerve plexuses of the stomach, lungs and liver, the skin, taste, smell, hearing and sight, react in their specific way upon the forces they are in contact with, the cell bodies organize and transmit along the nerves as nervous energy with specific intensity and wave lengths to the brain, wherein they are adjusted into the equilibrium of life, the relations

of which is feeling, as the product of this seething but systematic whirlpool of the multitudinous activities constantly being poured into it by the same system they have been taken only in inverse relation. The general system of the physical reactions is the unity of the relation of force carried centrally or to the brain by the nerves, pass into the multitudinous cells and continue on through the protoplasmic processes or "durdrites" that are nerve plexuses that have the same anatomical and physiological functional analogy as the capillaries in the blood. It is the reaction of these plexuses of the varied forms of nervous energy that reproduces the unity or equilibrium within that is feeling with all its variations that is the measure of the system of work without.

The circulating nervous energy is only a special system in the general system, and like the circulating blood, is but an instrument to maintain the general equilibrium of life. No special part of nervous energy in any part of its circuit, not excepting the brain, even borders upon the "threshold" of sensation, and "special sense-areas" in the brain are logical delusions that have no existence in fact, and an extreme example of the untrustworthiness of reason. What we call sense-areas are only highly organized physical functions, and while located in the brain are no more sense-areas than is the eye, vermiform appendix or spleen. The brain, in part or the whole of its function, does not even border upon the most primitive sensation or feeling. It is the physical instrument; the reaction or product of its complex work is the system of its ever-present equilibrium of relation in feeling that is the measure of life. In the brain, as in the world without, each reaction causes change, is function or work. As we cannot work without the expenditure of energy, each reaction is its measure in the world's unity. As the brain is a multiplex system of related and continuous function, the equilibrium is the measure of its unity in feeling.

For a more detailed elaboration of its physics I must refer you to my article, "The World is Idea."

Here, after having first stated the problem in all its extreme relations and variations that appears as a very hecatomb of facts without system, no hope of possible solution, followed them with some order into the idea that they are an equilibrium-ever-present unity of related work, and then unfolded the system which demonstrates that feeling with all its variations is the equilibrium of relations, we are prepared to analyze the facts we started out with and up for solution. If our synthetic and constructive work is scientific and true, woven with system into the unity of a world law, it must as surely guide us in our analysis of the facts and laws of the world into the system of details.

If we unfold and demonstrate two or three of the extreme special facts with system, all the others must be a part of it, and hence all that is needful, for after casting them in general form and system there will still be left a thousand or more special and related problems that will suggest themselves for solution, many of which are so hedged about and involved that it is only possible to follow them with system by those familiar with the technical details. Indeed, so much has been written upon the subject, if gathered together would make one of the greatest libraries in the world.

Why is this feeling, function and pain in the foot of Mr. H. that was amputated three years ago? For the same reason that your feeling and pain still lives and centers around your child that was amputated from you by disease. For the same reason whereby you are often reminded of the painful experience that brought you to death's door by the simple, inconsequential and worthless vermiform appendix, from which you was amputated that you might continue to live its memory again and again. All these feelings are still without, because they have become organized and established as living realities by the way of the nerves in the plastic plexuses of the brain; indeed, were so acute in the reaction that nutrition built them up into excessive proportion as special functions in the unity or equilibation of all the functions. While they remain acute for a time as a central feeling or thought around which we hover and revolve, it nevertheless gradually becomes less and less, more indistinct, fades out into the stream of oblivion, is only a shade of memory. The system of relation in this equation is the reaction of proportion, and hence purely a question of physics. Function makes structure, and structure is the organized, active and living memory of function. In inverse ratio, as function ceases its memory of organized structure gradually atrophies, fades, becomes resolved more and more, but never extinct, for it will always remain as a scar of its once active being. Time softens all things, makes all things good. This is the equilibrium of the world's creative economy. The world a creative, enduring and immortal work that is constructive; what we call death is but a transition into the greater life. What we store up to-day out of the economy for our continuance is a reflex of the world's system of economy. The more economical our good work, the more immortal it becomes in the immortality of the world's work.

What we find in the extreme expressions of painful feeling with its relation to the general equilibrium of feeling is the same system of ideal and pleasurable feelings, but not with such an acute and distinct relation. Why is this so? Again it is purely a question of the world's equilibrium of creative physics. We cultivate the pleasurable and ideal equilibrium of feeling because it is enduring, creative and constructive, and hence always has a very close and intimate relation with the world's system, that is never extreme in its expression; while the painful feelings are destructive, shrink and work away from with all the skill we can bring to bear, make it as extreme and remote as possible. It is because the world is a creative good work that we have pain therein. Indeed, if we did not have pain, the world would not be a creative good work, for it would be without system and meas-

ure of relation, and hence of no worth. We would have nothing to live and work for in the world. Pain is only a sharp stick, to rest only reminds us that we are becoming estranged from it, but to remind us by the pains to which we are still subject, to blind physical fate over which we have no control, that there is still much work to do. This is the inspira tion, faith and hope of man to work on and on to unfold the immortal system of the world, that is the system of the world's immortality. It is thus that whoever unfolds a system of truth that prolongs life and cuts the threads of pain is a genius in the world, for he brings an immortal message from immortality; is an immortal son of a truth out of the father of the immortal truth.

Feeling with its pleasures and pains is not alone a physiological and psychological problem to engage our attention; it is the problem of the world that occupies universal attention; it is the law of universal truth to which all mankind hew and work with greater or less skill. In this work some use only the saw and buck; others till the soil with system and skill that is the measure of their related economy; some are haulers of wood and drawers of water, while there is still a great army that work behind the counter, in the counting house, factory and mine, but of all these crude, uncultured workers in the world with enduring system, in all my experience and acquaintance no class has anywhere near deviated, become estranged from the world's system of truth and work, than the self-esteemed aristocracy of the refined education and higher culture. They have become so specialized in details of systems that they have become blind to the system of the world truth. If it should knock at their door, they shoo it away as an intellectual tramp, a scientific beggar clothed in the garments of simplicity that is the common style and cut of the ages; he is persona non grata, a commoner, plebian, has not even the fit and cut of the age, to say nothing of the higher aristocracy of culture up to date, of which they are the master tailors who give instruction and set the style. An innovation into this charmed circle would be to admit a barbarism into its specialized realm, and, like a bull in a china shop, would soil its carpets, ruin its decorations of wonderful coloring, like a cowboy spit upon the idols, shoot holes through the wonderful production of creative art, scientific technique; arrayed in its cutaway coat, patent leather shoes, high polished color, can only look forward; detail is all; to look sideways is strangling; to look back is death by strangulation.

Ignorance looks with pity and sympathy upon the higher culture and science typified up to date by Professors Loeb and Mathews, for when they say "it is only a question of time before life can be produced in the laboratory," and that "man dies because he is ignorant," crudity is a gem, common ignorance ascends upon the throne as a brilliant and shining light of truth in the temple, although it is clothed in jeans, bows with simple faith behind the pews, he is surrounded by the halo of the world truth, is considerably higher than the world's organized instinct that is its demonstrable reality, for he recognizes it, is a related good work in the world's system of economy, and when such a scientific fetish is paraded before the world as its greatest and last product, and the world of science accepts and receives without a dissenting voice, the higher education and culture adulates and decorates, the negative shake of the head by ignorance that is the expression of its doubt, it is comparatively a world scientist that is the system of the world philosophy, while these highly cultured scientific specialists have become so warped and conceited as to state they cannot only create life, but make the personal life immortal. This is science gone mad for it equals the statement they can create the world. In the light of this relation we say God bless ignorance; and in all humility, with reverence and penitence, say: God, damn this science, for it is worse than witch grass, the product of which is strangulating to the world's system of economy, tends to ruin; its blossom is the poison of the aspen; its plant the sting of the serpent. It is my love and admiration for the special scientific facts and truths they have unfolded with wonderful skill; that is my excuse of giving it this special attention, for I feel they would be the last to knowingly be the authors of a general error, and too great scientists not to correct a mistake.

Feeling with all its variations is dependent on the entire nervous system, the measure of all its special functions adjusted into the equilibrium of their relations in the brain. This is the home or location of feeling. Then how do we feel it locally in our body and the world without? Feeling is the equilibrium of all our bodily functions; it is the measure of their related work. When the local function is injured or diseased its relation in the equilibrium of adjustment to all becomes extreme in the reaction and is painful feeling. The pain is felt locally because it is the changed function carried into it that causes the measure of its related feeling. It is thus that feeling is always in the unity of this equilibrium within, and is always felt without because it is the source, the measure of the physical equilibrium. Indeed, this is why pain is always felt locally; it is the local disturbance without that is the painful feeling within.

Occasionally, however, we find a man with a world pain; everything in the world is painful to him; a smile has no place; it has become frozen into his face. We call this psychic pain; it is a deep melancholia, insanity. The distinction between this world, or psychic pain, and the local pain in the world of psychics is a part of the same system, only the terms or factors in the reaction have become changed. This man has a general molecular change in the brain, a diffuse degenerative atrophy after the kind we have in the earlier stages of the kidney in Bright's disease. With the multitudinous streams of nervous force carried into it constantly the reaction in this equation must be the legitimate product of a diffuse and general equilibrium painful feeling; disease of the mind.

THE RELATION THE UTERUS BEARS TO THE MIND.

BY J. C. CARLTON, M.D., BONHAM, TEXAS.

IN dealing with this subject every general practitioner is directly interested. Every specialist, no matter what specialty he is practising, is also interested, in that not a single one escapes the appalling appeals of such patients. Every woman suflers more or less, and some almost constantly, from some functional derangement of the organic structures of the body. We are frequently consulted by those who, although suffering from no gross pathological lesion, nevertheless, require our aid, for the great discomfort, both physical and mental, which these various functional disturbances entail, and we should make every effort to afford them relief. Many of these simple deviations from the normal are really precursors of conditions of the most serious nature. There is every reason to investigate these minor ailments because of their great frequency and important bearing upon our success as practitioners. No scientific physician is pleased when he finds he has lost some of his patients because they have become discontented and annoyed at his lack of interest and sympathy for their minor functional disturbances and that an arrant impostor has them in charge, because by his tact and knowledge of human nature he has readily relieved their imaginary or their apparently trifling ailments. Old ladies and lay persons generally are often loud in their praise of these irregular practitioners simply because they have given attention to these minor difficulties.

Among the more important of such lesser derangements are the reflex neuroses, which will be considered from the standpoint of the general practitioner or gynecologist. There are many who seem to consider them insignificant, and some even appear to doubt their actual existence. The reflex neuroses are, of course, symptoms, and yet are more than simple symptoms, as they are frequently productive of more distress than the organic disease from which they take their origin. Neuroses is a generic term for a condition of the hyperesthesia or disturbance of the nervous system which simulates disease in a healthy organ, or an apparently healthy organ, or without evident lesions of any of its parts. Take the uterus, which gets its nerve supply from two main sources, namely, first, the third and fourth branches of the sacral nerve, which is of the greater importance; and, second, from the inferior hypogastric and ovarian plexuses. If the reflex is from the ovarian plexus alone you find that the mind is never disturbed, or if from the inferior hypogastric alone you find a disturbance of the stomach and not of the mind; however, you do find all the reflexes often manifest at the same time. These are only confusing and calculated to mislead the physician. Reflexes that disturb the mind are the most difficult to diagnosticate, for only irritations of the body of the uterus are productive of reflexes to the brain. You will find that where there is some irritation of the third and fourth sacral nerves, whether it be congenital or not, your reflex is invariably a partial or complete loss of consciousness or hystero-epileptic in character. If you have an inflammation of the third and fourth sacral nerves in a young girl you will perhaps have no reflex trouble, only at her menstrual epoch, and not then unless there is some constriction retarding the flow so that pressure is made by the walls of the uterus becoming distended, making pressure on the peripheral irritated nerve; then, in that event, you have a reflex to the brain that will render the patient unconscious, deaf to reason, and nothing more than a lunatic until the pressure is relieved. Again, you find the irritation of such a character that the body of the uterus is very much enlarged, making such pressure on the third and fourth sacral nerves that your patient is illucid for days, and even months, or until she falls into the hands of some one that will give her local treatment and such rest as will reduce the size of the womb so that the pressure on the irritated nerves is relieved, and then, and not until then, is it that your patient is relieved.

There are other conditions that will enlarge the size of the womb that do not give off and reflex, but when such is the case you will find the nerves in a healthy condition. You will also find the uterus without any hypertrophy whatever, and yet have the nervous reflex; but when such is the case you will find that the growth is of the nerves and will produce the same reflex as if it were in the fibers of the uterus and making pressure on the nerves, and these are the ones which apparently have nothing the matter. Yet you find them going from one doctor to another, resisting any and all treatment offered or suggested, for this one reason. On examination you find a healthy uterus, apparently, find nothing that would indicate disease, neither by appearance or size, yet your patient will insist she has some disturbance and, as you often hear them complain, that they feel as if they were going crazy. These are patients that worry the doctor the most, and usually go from one to another until finally they are convicted of lunacy.

Neuroses of the womb should be studied carefully, both from an anatomical and physiological standpoint. Plainly stated, there is yet much to be learned. The nervous system should be studied by the general practitioner, as well as the specialist; otherwise he is shut out from a true knowledge of disease. That there are many nervous troubles that are reflex no doubt, and one cannot in justice to himself and patient study the nervous reflex too carefully. Do not understand me to say that every woman who is crazy dates her dementia back to a diseased condition of the womb alone, and can be cured by some local treatment, but I do say that if on examination you find some diseased condition of the womb which makes pressure on the third and fourth branches of the sacral nerves you will always find some reflex trouble of the mind, which should have the attention of the physician until relieved.

Ascertainment of the Source of Blood, by Means of Serum Precipitants.—It is stated by all authors that, except in the case of closely related animals, serum precipitants are strictly specific, *i. e.*, that the serum precipitant of one animal will not react with the blood of a different species. The result of recent investigations by Linessier and Lemoine (*Gaz. Des Hop.*, March 27, 1902) is that this specific quality does not exist. They have established that the human serum precipitant will aso react with the blood of oxen, horse, sheep, pig, guinea pig, or hen. Its action, however, is incomparably clearer with human blood. They further show that it is possible to avoid this source or error by employing in the tests only serum solutions which are quite dilute. A solution of 1 to 1,000 permits a precipitation by the active corresponding serum, but never by any other serum. These precautions taken, and the technical details of preparation of the serums accurately performed, this method will yield very reliable and important results in legal medicine.

THE CLINIQUE.

METHODS OF REDUCING TEMPERATURE OTHER THAN BY THE USE OF COLD.

IT IS an absolute essential in the practice of medicine that we should have at our finger tips the method by which we can control that supreme essential and guide to all febrile diseases, viz., "fever." When the application of cold is unavailable or unnecessary we must have a most thorough knowledge and appreciation of the *method of reducing temperature, other than cold,* and to do this a careful study of each individual case must be attained, and we should never treat "fever" as fever alone. The matter may be conveniently classified as follows:

First.—Absolute rest and quiet, with freedom from anything near the patient which could in any way annoy, worry or excite the patient.

Second.—Diet—Such a diet as shall give to the patient the nourishment necessary to sustain vital functions, in a condition of rest and quiet, so that weakness be not a cause of the continuance of fever, and yet a diet calling for as little activity on the part of the metabolic processes as shall be consistent with proper nutrition. In other words, a diet which fulfils the wants of the organism with the least waste and expenditure of energy in digestion and assimilation. Milk, undoubtedly, is recognized as such a diet, its proteid, sugar and fat ratio, fulfilling all such requirements.

Third.—Temperature may be obtained and kept above the standard—in other words, it can be maintained—by the excitement of a hypersensitive nervous system, in which case a few doses of sod. brom. gr. x. or chloral gr. v. or the two combined may be all that is necessary for a remission of the fever. Such a condition may again be exhibited by extreme wakefulness, when trional gr. xv. may thus serve as an antipyretic.

Extreme pain, on the other hand, either of itself causing restlessness and thus muscular efforts, or combined with a neurotic temperament, may render reduction of temperature extremely difficult, in which case an injection of morphine sulph. gr. ⅛-¼ combined with atropine sulph. gr. $^1/_{200}$-$^1/_{150}$ may act as an antipyretic.

Fourth.—Paradoxical as it may seem, Winternitz and Baruch have both demonstrated that *short* applications of heat bring about the same results as to temperature reduction as the application of cold. Thus, one to two minute applications of heat (104° F. and upward) are followed by a fall of temperature, the result of heat elimination through dilatation of the surface blood vessels, which are capable of accommodating from ½-⅓ the blood of the body, and through a diminution of heat production by the reflex influence of the thermic nerves upon the thermogenic processes. This fall of temperature is accompanied—as is the case in the application of cold—by no depression of the vital centres, but rather by a toning up of all the nerves and nerve centres in the body to perform their normal functions, the rise of temperature in most cases being due to these centers running out. In a word, *short* applications of heat lessen heat production and oxidation and encourage heat elimination.

Fifth.—It has been recently discovered that there existed a "bed temperature," especially noted in children. Thus in the convalescent stages from a typhoid or a malarial or other infection the temperature would persist so long as the patient was bed-ridden, but would entirely disappear, and at times surprisingly suddenly, as soon as the patient was permitted to leave his bed.

Sixth.—Finally we come to drugs which are used for their antipyretic action, and for practical purposes these may be divided into three classes:

(*a*).—Those which allay or prevent fever by inhibiting its production. This class, as a matter of fact, does not exist, since drugs that alone decrease heat production are not known.

(*b*).—The drugs which possess the power of decreasing bodily temperature by increasing the dissipation and decreasing the production of heat.

(*c*).—The compounds which allay fever, not by stopping the manufacture of heat units, but by so increasing the exhalation of heat that the loss is greater than the production.

Thus it can be at once noted that "the first is ideal, the second is the one we have to be content with, and the third is the one used by our forefathers." The objection to the use of all antipyretics, no matter to what class they belong, is that they invariably, if given for any length of time or in any quantity sufficient to effect hyperpyrexia, depress the patient and decrease his power of resisting the disease. And the question is one, after all, not of actual degrees of Fahrenheit present, but rather as to whether the temperature present is doing any harm.

In the first class, that which exhibits heat production alone as I have mentioned, unfortunately we have no drugs.

To the second class, that which not alone decreases heat production, but increases heat elimination, belong quinine, phenacetin, antipyrine, acetanilid, lactophenin, salicylic acid and its salts, guaiacol, carbolic acid and a number of drugs such as thailin, kairin and the like which are most often mentioned to be condemned. A few of these can be dismissed with a word. Salicylic acid and its salts when first introduced into medicine was employed as an antiperiodic and antipyretic, but the coal tar products of to-day have displaced this drug in the reduction of temperature almost exclusively by reason of the untoward effects from salicylic acid and its salts the result of dosage sufficient to have any real antipyretic effect. While it is used so largely in rheumatic fever it, by many authorities, is here thought to have little actual effect upon the temperature itself. Carbolic acid does decrease temperature, but it also can be advantageously substituted for guaiacol, 60-90 per cent. beechwood creosote, when painted on the skin of the abdomen, chest or thighs in the amount of 30-50 drops and covered by an impermeable dressing to prevent absorption, brings about a rapid and marked fall of temperature. A drop of 7° F. in two hours has been noted in one case recorded. Many observers have, however, noted serious nervous and cardiac symptoms resulting from its use, though Da Costa while using it never saw an untoward effect. The temperature is apt to rise again rapidly, preceded at times by a chill after its use.

Quinine seems to call forth some differences of opinion in its strictly antipyretic use. Curschman, Liebermaster and others composing the committee of the London Clinical Society, especially relative to typhoid fever, seem to agree that quinine is almost as certain and less dangerous as an antipyretic than the coal tar products. Wood, I believe, teaches that its effect upon the temperature is only manifest after crisis or during lysis, when it materially aids in the rapidity of reduction, which may be due to the fact that it tends to arrest oxidation. Liebermeister and Curschman administer it in dose gr. xv.-xxv. in starch capsules followed by a

mixture of dilute hydrochloric acid f℥ss. They give it not at the height of temperature, but 2 or three hours, *e. g.*, before the evening maximum. I would recommend the use of quinine hydrochlorate as the salt containing a high percentage of the alkaloid, and it is very soluble and easily borne by the stomach.

All the authorities seem to agree upon antipyrin or phenopyrin as being possibly the best compromise as any antipyretic when cold is not employed. Its ready solubility in water makes it easy of administration by mouth, per rectum, or even hypodermically. It is best given in doses of gr. x. repeated every two, three or four hours until gr. xl. are taken or a sweat ensues.

The advantages in the employment of quinine are its ready solubility, its comparatively rapid and marked effect, and the fact that its administration is followed not only by a reduction of temperature, but also by improvement in the mental state and good feeling. Against its use must be stated that its effect upon the weak heart must be very carefully watched. It is also disagreeable to take and often causes vomiting, but these disadvantages by reason of its solubility can be overcome by its administration per rectum.

Phenacetin is better borne by some patients than the preceding drug, but has the great disadvantage of being insoluble in practically everything. A conservative dose is from gr. iij. to viij. though gr. x. to gr. xx. are given in single dose. Its effect begins in about a half hour after administered, reaches its maximum in 3 to 4 hours, and may remain permanent 4 to 8 hours. Wood teaches that it is safer than antipyrin, while many observers, Hare, among others, believe the reverse to be the case. A practical point to remember is that two morning doses in effect just about equal one evening dose. Lactophenin is similar to phenacetin, except that the acetic acid radical is replaced by the acetic radical, and is given in dose gr. x.-xv.

Acetanilid or antifebrin is markedly antipyretic, and it has been stated that it is three times more powerful than antipyrin. It is often, however, followed by most unexpected and dangerous manifestations of chilliness, cyanosis and heart feebleness, with later erythema and rashes. The dose is gr. ij.-x. every four hours.

To the third group belong those drugs which only dissipate heat as far as we know—namely, the great group of cardiac sedatives and their allies.

Aconite possibly is the most used of this group. By its sedative action upon the heart, and as many believe, by its action upon the vessels, and possibly also upon the thermogenic system (as Wood teaches) it reduces bodily temperature by an increase of heat dissipated and perhaps by a slight effect upon its production tincture of aconite is the preparation used in gtt. j.-v doses every two, three or four hours.

Antimonial powder or James' powder (containing oxide of calcium and phosphate of calcium) is given occasionally as an antipyretic in the dose of gr. iij. to x.

Alcohol in small doses has little effect upon temperature, but in large doses causes a fall by an increase of heat radiation, and by excessive distribution of heat. If these doses be continued a further lowering of temperature will result, but by a depression of vital power caused by a too rapid destruction of tissue in the effect induced by the drug.

Spiritus etheris nitrosi, a household remedy for the reduction of fever in children, has stood the test for years. It is, of course, only a mild febrifuge and acts when given cold as a diuretic, and with hot lemonade as a diaphoretic, and by evaporation brings down the temperature. The dose for an adult is gtt. xx.-f℥i., to a child one year gtt. v-x.

Dover's powder, because of its ability to allay pain and act as a diaphoretic, was formerly much used as an antipyretic; by its latter effect, of course, does reduce fever to some extent. Grains iij.-v every two, three, four hours accomplishes this result. The acetates, citrates and tartrates were much used in former years for their diuretic action in reducing temperature.

Pilocarpine, gr. 1-12-¼, can reduce temperature either by diuresis or diaphoresis. However, as one can readily see, the last group of drugs includes remedies depressing to the most vital organs in almost every instance, and while these compounds act admirably in chosen cases, such must be mainly of the sthenic type, and other indications than the sole reduction of temperature must be manifest to justify their use.

Lobar Pneumonia.—Thomas N., negro, age 34 years. This patient was admitted to the hospital with the following significant history. Three days before admission (October 6) he was attacked by a decided chill and sharp pain in the side, accompanied by an appreciable rise in temperature. He also had a troublesome cough, and very severe headache. All these symptoms became much exaggerated until he entered the hospital three days later with all the symptoms and physical signs of a lobar pneumonia.

On admission his chart shows that he had a temperature of 103°, a pulse of 110, and respiration of 36. The physical examination revealed an involvment of a rather unusual area of the lung, viz., a distinct consolidation in the *upper area* of the lower right lobe, in addition to which there were noted the usual crepitant rales heard at the end of forced inspiration, increased vocal resonance, and characteristic bronchial breathing. Examination of the blood revealed an absence of leucocytosis.

On the third day of his admission, and the sixth day of his disease, he had a drop in temperature to the normal, which proved to be the pseudo-crisis (which nowadays is not such an infrequent occurrence), as two days later the true crisis made its appearance and he has been convalescing ever since.

It is a very practical point to bear in mind that it is difficult to recognize this infection in old people for the following reasons: In the first place, the pneumonia frequently assumes a central location, the so-called deep pneumonia or pneumonia centralis. Secondly, because of the emphysema incident to old age, which may distinctly occlude all signs of consolidation. Finally, as a result of the natural feeble breathing already present, it is very difficult, if not impossible, to recognize any alterations in the character and rhythm of the breathing, hence the bronchial type of breathing is obscured.

The acute onset, the accompanied rise of temperature and pulse, the hurried respiration, the prominent cough and pain in the side, the onset with a chill, the rusty sputum, the *absence of chlorides in the urine*, and the well-marked physical signs make an unmistakable clinical picture and aid greatly in the differential diagnosis from acute phthisis, pleurisy, pulmonary edema and incipient typhoid fever.

In the *treatment* of this disease it is important to remember that croupous pneumonia is not a disease of the lungs, but rather a general disease with a local manifestation in the lung. Along with this we must always bear in mind that the fever, *per se*, is not the danger indication, and that it is rather the general infection, and its results that must be controlled and carefully watched.

If we are able to see the patient in the first few days of the disease, which constitutes the pathological stage of red-hepatization or pulmonary congestion, nothing acts so happily, in the majority of cases, as veratrum viride, since, by its physiological action, it prevents any danger of obstruction to the pulmonary circulation. Although H. C. Wood does not believe in its efficiency, when the pulse is full and strong, it acts very safely if watched, and may be given in doses of m j-v of the tincture or fluid extract every hour or two, using the pulse as an indication. The most aggravating symptom in the early stages is the troublesome cough, which may be relieved by one of the opiates, which, however, must be discontinued when expectoration sets in. Thus small doses of morphia and Dover's powders in a soothing mixture forms a good remedy. During the stage of expectoration we first employ ammonium chloride, gr. v-x, and if more stimulating remedies are required ammonium carbonate, in the same dosage, with the ordinary Brown mixture forms a valuable means of treatment. At the present day there is much dispute as to the employment of blisters in such cases, and I believe, as is the concensus of opinion, that they are capable of doing more harm than good; indeed, we have achieved far better results in our hospital wards without such therapeutic means. A far better means of treatment, which is part of my routine treatment during the early stage of all my cases, is the employment of an "ice-poultice." This is made by inserting finely-cracked ice admixed with corn-meal or other fine material, into an ordinary chest jacket and applying the same closely to the chest. The judgment of the physician is taxed to the utmost when he endeavors to preserve the dynamic force of the individual until the crisis has passed. Too many mistakes are made by practitioners in making their patients "too strong" early in the disease, so that toward the end of the first week, when the trying ordeal of the crisis approaches, the system is overdrugged, as it were, and the heart may flag somewhat from depression. It has always been our custom here to gradually increase our stimulating agents as the disease progressed, in direct proportion to the amount of adymania present and in indirect relation to the condition of the heart and pulse. A ready rule of practice is to administer small doses of whiskey or brandy, say ʒss in milk every two or three hours, gradually increasing to ʒiv-vj if necessary. At the approach of the expected crisis this may be reinforced by the administration of strychnine gr. 1-40 every four hours. By this method, it can be seen, that very little energy is expended and that most of it is conserved to tide over the crisis. To hasten a delayed resolution in the lung, which so often leads to permanent crippling of the lung, slight counter-irritation may be employed. We have found much success from the local application of oil of amber (olei succini) and olive oil, equal parts, night and morning, the application being covered by a cotton jacket covered with oiled silk.

Typhoid Fever and Malaria.—George H. A., age 26 years; driver. The previous family history and personal history are both negative so far as his present condition is concerned.

The patient complained of general weakness and general malaise for several weeks prior to his admission. He had many chilly sensations, which were accompanied by general aching, fatigue and anorexia. A few days before admission he had a slight, yet persistent diarrhea, epistaxis, and a dry, harsh cough.

On admission he complained of all the above-named symptoms plus a painful sensation in the splenic area and slight tenderness in the right iliac fossa. His diarrhea had been replaced by constipation, and he also complained of severe general headache.

His temperature on admission was 103⅘, and it has since reached 105 at its maximum. Pulse was 96 and respiration 26. Thus it will be noted that *the pulse was slow in proportion to the rise of temperature,* which is a characteristic feature of this typhoid infection. He had passed only a small quantity of urine, suggesting a weakened circulation, and an accumulation of toxic products, which constitutes a rather unfavorable symptom or sign.

The chemical-bacteriological reports were as follows:

Blood.—Red blood corpuscles 5,240,000, white blood corpuscles 12,000 hemoglobin 68 per cent. Three days later the "reds" had dropped to 4,800,000 and the "whites" to 9,000, hemoglobin 80 per cent.

Urine.—Diazo reaction positive, otherwise normal.

Widal reaction was present 48 hours after admission. A few streptococci were found. No evidence of tubercle bacilli. The great importance of the blood count as a diagnostic factor in the early stages of enteric fever cannot be overestimated. At a first glance at the figures given it would appear that we were dealing with a leucocytosis (12,000), but we note that the red blood cells are proportionately increased (5,200,000), hence we do have a "relative" leucocytosis.

Insist upon the examination of the blood in all suspicious typhoidal cases, and in the vast majority of cases you will find this characteristic relative leucocytosis during the "acme" of the disease, with a relative gradual fall in both as the case advanced. I would therefore urge it upon you to make this valuable test—for such it really is—in all your cases.

On physical examination we noted the appearance of the specific eruption on his abdomen, lower thorax and back. These eruptive, evanescent spots appeared in crops, which is their most important characteristic feature. The spleen was enlarged to both percussion and palpation, the latter being attended by much tenderness.

Presuming an absolute diagnosis of enteric fever, the patient was ordered to be tubbed according to the methods which I shall detail later in my remarks. Curiously enough the temperature fall was not marked, and in the absence of marked typhoidal "symptoms" we were led to think of some other cause for this persistence of fever, and naturally thought of a mixed infection. Accordingly a carefully conducted chemic-bacteriological examination of blood, urine and sputa was productive of much knowledge, viz., numerous plasmodium were found in the blood, thus explaining in part the continued high temperature and enlarged tender spleen. We then ordered a therapeutic test with quinine, and this greatly modified the temperature chart and his general condition.

The *treatment* of typhoid fever practically includes a discussion of the Brand bath, which not only controls the fever, but in the majority of the cases acts as a general symptomatic measure. It cannot be too strongly impressed upon the practitioner that *"high temperature" is only a "symptom" of "fever," per se,* which latter (fever) represents the index of tissue metamorphism. In typhoid fever we have fever, plus profound nervous depression, viz., the so-called "typhoidal condition," and the latter condition—*this evident nervous depression—is even far more remedied by the cold bathing, i. e., by its stimulant action* (the reduction of "fever" is really only a secondary or subsidiary action of the bath, in consequence of increased general tonicity), hence it is

our aim, by this Brand bath, to obtain a good pulse, a strong respiration and a healthy skin, as also a strengthening of the nervous system. The general rules to be adhered to in this treatment are as follows:

First.—Apply before the fifth day, whenever possible, or as *early* as possible thereafter.

Second.—To be employed when the bodily temperatures, per oram, reaches 102⅖° F.

Third.—Employ water at a temperature of 70°.

Fourth.—Permit patient to remain in bath 10 to 15 minutes if feasible.

Fifth.—Employ external friction while patient is in the "tub."

Sixth.—Apply an ice bag to the scalp and give the patient a little stimulant in the shape of whiskey or brandy, before the bath, and during the bath, when there is shivering.

If the patient is too terrified, either through nervousness or idiosyncrasy, or the skin is hypersensitive (especially noted in women at or near the menopause and menstrual periods) we stop the process sooner, or, better still, don't employ the bath at all, as it is sometimes capable of doing more harm than good. Other contraindications to this mode of treatment are neuritis, external neuralgia, certain cutaneous diseases (not permitting of friction), hemorrhage, perforation or a tendency toward either, an excessively weak heart. An ordinarily weak heart is rather benefited by the bath, both (*a*) as the result of the general stimulation and increased tonicity, as well as (*b*) by the subsequent shock.

The average mortality of cases with bathing is 4 to 7 per cent.

The average mortality of cases without bathing is 15 to 20 per cent.

It is only fair to state that a better regulation of diet and the less use of drugs in hospitals has also materially helped in reducing the mortality.

During the bath friction should be applied to the body in a methodical manner, since it has a reflex stimulant effect upon the heart and vessels and invites the blood to the surface, where it can more easily be "cooled" and transmitted to the internal organs. *Never apply friction to the abdomen,* as it might stimulate peristalsis and thus invite perforation. We should not pay too much attention to the shivering and cyanosis in the average case, but extreme judgment is always necessary in all such cases.

After ten or fifteen minutes of such procedure the patient is removed from the bath and carefully lifted into his bed. Then he is "mopped" with a soft towel, *but not actually dried,* as the evaporation of the water from the surface of the body completes the effect of the bath. The patient is finally wrapped up in a blanket and allowed to sleep.

A repetition of the bath every three hours is the limit for the employment of this method of treatment; in other words, eight baths in the twenty-four hours is the maximum number. How shall we regulate the number of baths? If, at the end of three hours, the temperature is yet 102 2-5, we "tub" the patient again. If it is not, but is above 101°, then we sponge the patient, and take the temperature again in three hours, when the degree of fever shall again determine between the bath and the sponge.

In some cases of enteric fever the temperature never reaches 101°. In these cases it is a good routine rule to sponge the patient three times daily.

The bathing should be continued from the making of the diagnosis until the temperature remains permanently below 102⅖, and not only during the fastigium, as many text books prescribe. This is in accordance with my statement that we are not treating the temperature, *per se,* but rather stimulating the system in toto. We will at times notice that the temperature will immediately bob up and down with the application of these baths, somewhat similar to the chart of a drunkard's pneumonia. In these cases a small dose of codeine or other sedative before the bath is greatly beneficial, as the irregularity is due to nervous involvment.

Equal in importance to the bath treatment is the regulation of the diet in enteric cases. Before entering upon the "foods" proper I would like to emphasize the therapeutic value of water in these cases—in fact, in all febrile diseases: (*a*) It quenches the thirst, (*b*) it moistens all the mucous membranes, (*c*) fills up the blood vessels, thus increasing the tension, (*d*) it is undoubtedly the best diuretic we possess, and (*e*) it is antipyretic to some extent, especially if given in cold saline enemas, which are often extremely useful. For the above and other reasons it will be seen that water in typhoid fever is an excellent remedial agent, and its use in large quantities should be encouraged.

Regarding the foods, it cannot be questioned that milk constitutes the best single-food diet at our command, and, moreover, it is a "complete" food, containing the essentials, sugar, fat and proteids. A most excellent method is to order ℥i every minute by the watch for eight doses (℥i) and repeat every hour, gradually increasing the single dosage until three, four or five pints are taken daily. If it is difficult of digestion we may refer to one of the following means, viz., by adding a tablespoonful of lime water to a glass of milk, or dilute hydrochloric acid, gtt. x-xv to f℥vi of milk, or sodii bicarb, gr. j to ℥i milk, or by the addition of a slight quantity of seltzer. These additions all tend to modify the curd of the milk, and thus make it easy of digestion. Another practical point is that we should never tell our patients the amount to be taken within a day, but rather prescribe it in dosage. As often happens the patient soon rebels against such an exclusive diet, when a mixture of milk and vichy will often prove satisfactory. Next to this buttermilk has proved to be efficient, and many clinicians of large experience claim most excellent results from its employment. Failing in these, I have had good success with the administration of koumyss, which can be prepared according to the following formula:

℞ Sugar.....one tablespoonful
Water .....two ounces

Make into a solution.

Yeast .....⅕ of cake
Water .....one ounce

Make into a solution.

Milk .....two pints

M. Warm the mixture. Bottle. "Stand" upright for 24 to 48 hours (depending upon the warmth), then place "on side" three to four days. Temperature 52°.

As alternate we may also permit the patient to have some ice cream.

No solid food should be allowed until ten days after convalescence if such rule can be insisted upon. Then we may introduce strained broths, soft eggs, light soups, and finally merge from semi-solids to solids. Many clinicians begin their semi-solid food administration too early, and often, sorry to state, with unlooked-for results.

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"Pythagoras was mis-understood, and Socrates, and Jesus, and Luther, and Copernicus, and Galileo, and Newton, and every pure and wise spirit that ever took flesh.—To be great is to be mis-understood."—Emerson.

INTERNATIONAL MEDICAL CONGRESS.

THE fourteenth International Medical Congress, recently held in Madrid, Spain, was, especially from a social standpoint one, of the most brilliant ever held in the history of the Congress. The King and Queen mother occupied the royal box at the opening of the session, at which seven thousand physicians were present, representatives from the leading medical societies of the world. Every effort was made to make this great gathering a pleasant one. A reception was given in the royal gardens, and also by the King in the palace. Expeditions were also made to the Escurial and Toledo. A bull fight was given for the entertainment of the guests and was very much appreciated. Reports from the different departments of our profession were given, but those which attracted the most attention in matter and discussion were the three subjects which are now exciting the medical world and to which scientific investigation is more particularly directed—viz.. malaria, cancer and tuberculosis. In the discussion upon malaria it was stated by a Spanish physician that the discovery now generally accepted that malaria was transmitted by the bite of the mosquito was made by Grassi, of Italy, and not by Ronald Ross, of England, to whom the credit by many writers has been given. It was suggested in reference to the action of remedial agents in the cure of this disease that the parasite introduced into the blood by the mosquito's bill being sensitive to light, buries itself in the red blood globules and that the efficiency of quinine depends upon its fluorescence, by which it makes white light bluish, a color that is inimical to the growth of the microbes. Some of the other alkaloids which are valuable in the cure of malaria are esculin and fraxin, which are to the horse chestnut and ash what quinine is to the Peruvian bark, and which show the same fluorescence as quinine. This, of course, is only a theory, but in the absence of any other explanation will be as satisfactory as any. The recurrence of malarial attacks at times when mosquitoes are not present to transmit the parasite was due, it was thought, to a continuous cycle of development of the germs in the human body which bridges over successive epidemics. Certain forms of the parasite seek the internal organs during the disease and, as it were, lie in wait for the young mosquitoes of the next season. These, when infected, produce a crop of what is called fall malaria, frequently found in the Roman campagne and in other countries where malaria is prevalent. Dr. Ascoli, of Rome, reported that malaria in epidemic form often appeared in Italy in June, nothwithstanding the fact that at this time there could be but few infected mosquitoes. Most of these patients showed antecedent malarial history, proving, he thought, the fact that the recurring attacks within the individual was what kept malaria in readiness to infect the young mosquitoes. It was a general opinion of those most conversant with the disease that the best way to eliminate it was not by wholesale slaughter of the mosquitoes, which was an expensive process, but to screen every patient by mosquito netting to prevent them from infecting themselves. This method, it was thought, would soon limit the transmitting of the disease and render epidemics in low mosquito breeding lands almost unknown. Dr. Hawser, of Madrid, said that Amopheles did not furnish the only intermediate host for the parasite. The germ might live in humid earth under favorable conditions, and flourish in regions free from mosquitoes. The inhalation from dried marshes, the drinking of water infected by the bodies of dead mosquitoes set free the organisms which infect man through the medium of the air.

The subject next in importance to malaria, upon which several interesting papers were read and ably discussed, was the cause of cancer. Notwithstanding a large amount of laboratory work was detailed in which the research has been most carefully conducted, still no definite conclusion, satisfactory to the majority of the scientists themselves, was reached as regards the cause of the disease. While some maintained that it was due to a parasitic infection in which it was thought the parasite had been discovered, others claimed that the discovery had not been fully proved and held to the belief that it was caused not by parasitic infection, but by a degenerative process of the tissues owing to some morbid condition, the cause of which has not yet been ascertained. It is, however, a source of great encouragement that the line of investigation now being followed by so many scientists gives us hopes that the question as to the cause of this terrible disease which has hitherto baffled the research of the medical world may be solved before another meeting of the Congress.

The papers presented upon the subject of tuberculosis and the discussion which followed contained no new facts, but summarized the investigations which have occupied so much of the attention of the profession during the past year. The

discovery by Koch of the tuberculous bacilli directed attention particularly to the destruction of these microbes as the principal cause of the wasting of the body seen in consumption and the general fatality of the disease, leading to a treatment more especially germicide in its character, in which the actual conditions which lead to the development of the disease were in a measure neglected. A careful study of the subject in hospital and private practice has cast new light on the mode of infection in tuberculosis, the incipient steps which lead to its development and the most efficient measures for its prevention. The fact is now fully established, as Dr. Pottinger states in a recent article in the *Journal of Tuberculosis,* which embodies the consensus of the opinion not only of the Congress, but of the profession generally, throughout the world that we have two causes for tuberculosis, one subjective, one objective; both preventable. Without the bacillus there would be no tuberculosis, without lowered resistance it would be uncommon, but with both present we have favorable conditions for its spread; to combat it, it is not sufficient simply to turn our attention to the destruction of tuberculous discharges. We must also address ourselves most assidiously to the work of increasing the resisting power of the individual. Better sanitary conditions must surround our people, better hygienic conditions attend their mode of living and a more natural life must be pursued.

The International Congress is so important not only from a social, but from a scientific standpoint, bringing together some of the ablest thinkers in the medical world in familiar intercourse, that we heartily wish that the different medical organizations in this country would more fully avail themselves of its privilege. This country is taking the lead in psychological thought, which is rapidly taking its place as an important factor in progressive medicine, and there is no doubt, if fully discussed by the scientists of the world, rich results would be obtained. The next meeting of the Congress will be at Budapest, and we trust will be more largely represented by this country.

THE CODE ELIMINATED.

THE American Medical Association, at its last meeting, took a step in advance by eliminating the word "code" from its by-laws, and instead adopted "a suggestive and advisory document" which shall not be "mandatory as heretofore," entitled "The principles of Medical Ethics," with the following explanation:

"Your committee has given extended and careful thought to the proposed revision of the code of medical ethics referred to it for consideration. As you will note, on the caption of the report the word 'code' has been eliminated, and the expression, 'The Principles of Medical Ethics of the American Medical Association' adopted as adequately descriptive. In reference to this change, it is proper to say that such action on its part is based on the idea that the American Medical Association may be conceived to occupy some such relation to the constituent State associations as the United States, through its Constitution, holds to the several States. The committee, for this reason, regards it as wiser to formulate the principles of medical ethics without definite reference to code or penalties, thus leaving the respective States, etc., to form such code and establish such penalties as they may regard to be fitting and proper for regulating the professional conduct of their members; provided, of course, that in so doing there be no infringement of the established ethical principles of the association. The committee regards as wise, and well calculated to facilitate the business of the present organization and to promote its harmony, this course which leaves to the State associations large discretionary powers concerning membership and other admittedly State affairs. Your committee has retained, to a large extent, the phraseology of the existing code, while aiming at condensation of expression and a better understanding of some of its statements.

"The report of the committee has been reached unanimously, without discussion or distrust on the part of its members, each aiming to formulate a result based on principle alone, and without regard to any past or present disagreements or misunderstandings whatsoever. Such being the case, the committee invites your candid and unprejudiced attention and action to the results of its labor, feeling that at least some good has been accomplished."

MEDICAL EDUCATION.

THE presidential address of Dr. Frank Billings before the Am. Med. Ass'n at New Orleans, which has been widely published, deals with the important subject of medical education in a broad, practical and, withal, comprehensive manner. The history of medical teaching is rapidly sketched, showing the steady improvement accomplished, the passing of the proprietary medical schools and the advent of the university departments, all of which, while familiar to the majority, is worthy of repetition. It is well known that while medical schools are maintained ostensibly to teach medicine, in reality they exist for the prestige which a professorship affords the teacher in his private and consultation practice. The student's tuition will no longer pay for the instruction he must have, a condition which is just beginning to be appreciated, as shown by the increasing endowment of our educational institutions. With this must come an improvement in the quality of the teaching.

A great responsibility rests upon the person who is instrumental in selecting a school for a pupil, as a mistake in this regard results either in failure or complete handicap, which is about as bad.

Scientific medicine has been revolutionized in the last two decades and apparently we are just at the threshold, with an enormous pressure from behind, which means the survival of the fittest.

Dr. Billings sums up his excellent address as follows:

"To-day medical science demands primary instruction to fit a man as an investigator and scientific physician. If not properly educated, he cannot grasp the great problems which medicine presents to-day as he did the more simple clinical facts which comprised the art of medicine and surgery a few years ago. In the future, medicine must be taught in the large universities of the country and in the State universities which are situated in or near large cities, where an abundance of clinical material may be commanded.

The State university and the college which desires to teach medicine, and is so situated that it cannot command clinical material, should confine itself to teaching the sciences fundamental to medicine. These should be taught as pure sciences, and should be included in the course for the degree of S. B. A college or State university ambitious to teach the medical sciences can do so without great cost. To attempt to teach applied medicine without proper and adequate hospitals, and with an insufficient number of patients would be irrational, nor can they command the necessary funds with which to do it. From such colleges and State universities the students could go to the larger institutions which are able to furnish the proper facilities for teaching applied medicine and surgery.

"The general hospitals of many of the cities, now used by proprietary schools, could be utilized as clinical schools for both undergraduate and post-graduate teaching, conducted by the clinical teachers in the existing proprietary schools. Indeed, these hospitals could be utilized as university extension clinical courses. Necessarily they would have to be under the control and direction of a university medical school.

"How many schools may be necessary to educate the number of doctors of medicine required annually in the United States? This question one cannot answer, but it is safe to say that 2,500 graduates annually will fully supply the demand. This would imply about 10,000 to 12,000 matriculates. A minimum number of twenty-five and a maximum number of thirty-five medical schools should offer sufficient facilities to educate 10,000 students. The various State universities and the colleges which offer adequate science courses would educate a great number of students in the fundamental branches or in the first two years of the medical course."

Much more can be accomplished by a united than by a divided profession. "In unity there is strength," and this can only be possible when the sacrifice of principle is not involved. The fundamentals in medicine can be made universal. All else should be left as free as the air we breathe.

The current market price of liquid air in Berlin, where there is a large manufactory, is 36 cents per litre, or nearly 1¾ pints. Produced at this cheap rate, liquid air will undoubtedly form an important article of commerce.

HOW A BERLIN PROFESSOR WOULD FIGHT TUBERCULOSIS.

IS there any rational prospect of "stamping out" tuberculosis by the sanatorium treatment of consumptive individuals, or does this method of opposing the disease tend rather to extend and perpetuate it? Before attempting to answer this question, we should form a clear conception of what Claude Du Bois-Reymond, in a recent essay, has termed "The Natural Struggle of Mankind Against Contagious Disease," and which, in accordance with his theory, may be concisely described as follows: The danger of infection from any disease must depend upon the "contagious energy" of that disease. This energy may be measured by the "daily rate," i. e., the average number of healthy individuals infected by one single case and within one contagious period. The contagious period and the daily rate are inversely proportional. By calculating on this basis Du Bois-Reymond finds that measles, for instance, is fifty times more contagious than pulmonary tuberculosis. Hence the risk of infection from the latter appears almost trifling when compared with the bacteriologic picture of the tuberculosis patient, "scattering about him myriads of deadly germs and daily and hourly threatening all around him with the terrible virus." Judging from this description and the relentless laws of geometric progression, countless multitudes of tuberculous persons ought to be found everywhere, or rather they must, many decades and even centuries ago, have overrun all human kind. Where are all these victims? It may indeed be contended that all mankind is really infected, although the majority of infected cases never appear in statistics, and do not influence the daily rate, because they remain in good health—or may be counted healthy—in spite of their lungs containing a few calcified tubercles. Infected in this sense, Du Bois-Reymond admits, a large proportion of the people in civilized countries may possibly be, as is daily shown by post-mortem examinations in hospitals. But even this does not disagree with the conclusion that tuberculosis, clinically regarded, possesses very little or no energy of contagion. If the malady is really not dependent on contagion, but on other circumstances, if the virus is present in the bodies of most men, while the remainder are not liable to take it, such contagion has practically ceased to be real contagion, and evidently nothing is to be gained by exterminating it. Supposing isolation and disinfection to have been kept up until the whole country is artficially cleared of the virus, and a generation entirely free from tuberculosis has been reared—all predisposed children, however frail and delicate, having grown up without any risk from germs—what an unequalled field for the gigantic growth of an epidemic, or rather pandemic of tuberculosis would then be presented! How could infection therein be indefinitely warded off? Let us then not be deceived. Tuberculosis-sanatoriums, with regard to the hygiene of healthy humanity, are no better than a remedy given for the sake of appearances.

Since we are prohibited from adopting the plan of the ancient Spartans, or certain modern savages, who simply put to death all their invalids, we ought, from a high scientific point of view, rather to be thankful that nature so often frustrates our medical endeavors. Should we succeed in prolonging still further than at present the lives of our tuberculous patients, the standard of public health undoubtedly would be depressed, and the struggle against the disease be lengthened, in the same proportion. What we need is a more general measure, one that will not increase, but lower the number of predisposed individuals.

To be in any true sense effectual, the warfare against tuberculosis must be waged in behalf of the healthy, and in the first line, the children. They should be strengthened from birth and educated toward natural immunity. Even if the study of bacteria in the future shall fail to provide us with a remedy that shall artificially prevent the outbreak of tuberculosis (as vaccination has done in the case of variola), even if we are forced simply to leave the issue to nature, we must not despair of ultimate victory. If we build houses where tuberculosis may perhaps be cured, we should not shrink from pulling down houses where tuberculosis most certainly is bred. The entire rising generation ought to be trained from birth upward to the use of fresh air, bathing, sunshine, and breathing gymnastics. These things could, at a minimum of expense, be utilized everywhere and for everybody. Such progress, however, can only be achieved slowly and through severe conflict. Public opinion, and even medical opinion, are still far from a proper comprehension of the subject.. Widespread, time-honored prejudices, deep-rooted sins and abuses will have to be removed. But there lies the road along which never-failing Nature herself beckons us to advance. *Every individual dwelling must be converted into a sanatorium.* Then will tuberculosis retreat faster and vanish sooner than if we placed a hospital for it beside every house.

NATIONAL ACADEMY OF SCIENCES.

THE annual meeting of the National Academy of Sciences in Washington in April was of unusual interest. One of the most important papers from a medical standpoint was that of Dr. Weir Mitchell, in which he announced the acquisition of an antidote to the poison of the rattlesnake. It was many years ago that Dr. Mitchell originated the theory demonstrated by himself and Dr. Reauchert, of Philadelphia, that the venom of the cobra and of the rattlesnake, though they appear at first sight to be as different as possible in their effects, have the same qualitative composition. The bite of the cobra is almost always promptly fatal without much real soreness or swelling. The victim dies before any such symptoms can manifest themselves. The bite of the rattlesnake is not usually fatal; but frightful swelling ensues, followed by a breaking down of the health, from which the person may not recover for years or not at all—phenomena only too well known in those parts of the country where the crotalus abounds, yet both venoms are mixtures of the same tube in different proportions. One of these is a nerve poison, acting, roughly speaking, like strychnine. If it does not kill promptly its effects pass off, the matter is eliminated from the system and that is the end of it. This constitutes nine-tenths of the cobra-venom. The other constituent which is predominant in the poison of the rattlesnake acts like a zymotic poison, dissolves some of the fine tissues of the blood cells and its vessels, and in particular destroys the resistance of the blood to bacterial poisons generally. It does not kill at once, but brings about fearful lesions and lays the system open to all sorts of malignant influences. It is against this poison that Dr. Flexler, a well known student of Dr. Mitchell, has succeeded in finding a protective serum which has been tested upon guinea-pigs and other animals, and whose practical efficiency has been demonstrated.

LEPROSY.

THE former fear of the contagion of leprosy is the spread of the disease very much diminished shown to be much overrated and the dread of as its history and progress have been more carefully studied. As regards the cause of the disease we are still in a great measure in ignorance. Mr. Jonathan Huchinson, the distinguished scientist in England, has recently made careful inquiries at home and abroad, more especially in Africa, as regards the cause and communication of leprosy, and has reached the conclusion that notwithstanding the isolation of these cases, shutting them out from all contact with the outer world, there is no authenticated instance of the disease being communicated to the families of the sufferers, except by the contamination of the food prepared by leprous hands and eaten by the members of the family who are themselves uncleanly. Dr. Huchinson thinks that the great cause of the disease is the consumption of badly cured fish, which he thinks the natural home of the leproses bacillus and which is taken into the system not by the touch or the air, but through the mucous membrane of the mouth and the intestinal canal. In his investigations in Africa and in the leper institutions in India he found it was among the fish consumers that this disease was most prevalent. This was particularly noted among the so-called Salsette Christians, numbering about 50,000, whose diet consisted to a large extent of fish. In one asylum there were 369 lepers, and but 324 cases in the whole population of the Bombay presidency. These facts contributed by so authentic an authority as Dr. Huchinson are of the utmost importance in considering the entire isolation of leprous cases. In this city there are not more than a half a dozen cases and these are located in a small building on the grounds of the Metropolitan Hospital. The treatment recommended in an institution in Ceylon, where marked beneficial results have been obtained, has

been followed here with a certain amount of success, not in curing, but in preventing the spreading of the disease.

SMALLPOX.

PROF. Wm. Thorn Councilman, professor of pathology in the Harvard Medical School claims to have discovered the cause of smallpox. A paper detailing minutely investigation covering two years, in which every phase of the disease was carefully watched and through which an important discovery of medical science was made, was read at a recent meeting of the Boston Society of Medical Science, held in the Harvard Medical School. The statement was so satisfactory to the large number of physicians present that the society sent out an official announcement. "It has been determined that smallpox is caused by a micro organism, a protozoon, representative of the lowest form of animal life. This seems to relate the disease with malaria, and distinguish it from many other infectious diseases caused by minute germs known as bacterial." Dr. Councilman, in his paper of the smallpox germ, which is animal, not bacterial, exhibited its history through every phase in a series of fifty photo-micrographic lantern slides. By experiments on rabbits and cows, and observation of human patients, he showed that the germ has in man two cycles of development, while in animals, except the monkey, it has but one. That is the distinction between cow-pox and smallpox, and the reason for the efficiency of vaccination. Dr. Calkins, of Columbia, confirmed and enforced Dr. Councilman's statements. It is thought that this demonstration of the cause of small pox, which could hardly be made except by experiments on living animals, may lead to discoveries along the same line of the cause of chicken pox, measles, and some similar diseases, the origin of which scientifically is yet unknown. However interesting this discovery may be from a scientific standpoint, and leading to other discoveries along the same line, it is doubtful whether anything better than vaccination with the virus of a kindred disease, cow pox, will ever be discovered as a result of Dr. Councilman's work.

BIRTH AND DEATH RATE IN NEW YORK.

THE recent report of the Board of Health in this city gives us some interesting statistics of its birth and death rate and the increase of population during the past year. It will be seen that notwithstanding the large increase in population, owing in part to the excess of births over deaths, being 2,000 more than those reported at this time last year, and the immense foreign immigration, the death rate, especially among children, has greatly decreased, so that to-day New York is one of the healthiest cities in the Union. This is owing in part to the energetic and intelligent work of the Health Department in the increased cleanliness of the streets, in the abatement of nuisances which have been prejudicial to the public health, and the close watch upon contagious and infectious diseases to prevent their spread. The attention given to tuberculous diseases and the infirmary established by the Charity Department for consumption in connection with the Metropolitan Hospital is materially reducing the death rate in that disease. This city, with its parks, its pleasant drives and its easy access to the ocean, its hotels and its roof gardens, is fast becoming a pleasant place for a summer visit from all the surrounding country. The population of Greater New York, owing in part to its rapidly increasing facilities by tunnels under the rivers and underground railways for reaching suburban districts, will increase much more rapidly during the next few years than at any time in the past. But if the increase is only in the same ratio as since the last Federal census in 1900, it will have by Jan. 1st, 1906, a population of 4,000,000, being an increase of 600,000 in four years. It is admitted by many of the ablest scientists in Europe that the hospitals in all their departments and the colleges, with their thorough courses of didactic, clinical and laboratory studies, present facilities equal, if not superior, to any in the world.

SANOSIN IN CONSUMPTION.

THE Berlin Medical Society announces the discovery of a new remedy by Dr. Robert Schneider, to which he gave the name of sanosin. Dr. Summerfield read a paper before the society in which he stated that several patients, mostly workingmen, had been treated without interference in their work with "sanosin," the new remedy. Its use prevented coughing, fever and night perpsirations and resulted in the patients gaining weight. Even in severe cases of consumption the progress of the disease had been arrested. The remedy is not a serum, like Dr. Koch's "tuberculine," but a vapor administered by inhalation and generated over a simple alcohol lamp from a powdered mixture of Australian eucalyptus and sulphur. Eucalyptus has long been known as a powerful agent in the relief of pulmonary conditions, and increased attention is being attracted to a preparation of liquid sulphur discovered by Dr. J. Robie Wood, of this city, in its arrest of purulent formation, and its powerful action in the destruction of tubercular bacillae. From our experience of the two remedies separately we have reason to hope that further trial in the way suggested by Dr. Schneider may lead to still more favorable results in a still larger field of action. The new cure gives such promises of beneficial results that we trust it will be submitted to a thorough test by the profession.

MASSAGE OF THE HEART IN APPARENT DEATH.

NUMEROUS tests have been practiced to detect the actual presence of death in cases of the entire cessation of the heart beat and the absence of any evidence of respiration. Artificial respiration has been resorted to with apparent success in cases of

temporary suffocation, where to all external appearances the person was absolutely dead. The coagulation of the blood and the subsequent putrification of tissue are the only positive tests thus far heretofore discovered of actual death. The recent discoveries of Dr. R. C. Kemp, a German surgeon, by massage of the heart in animals after it had ceased to beat and was apparently dead for sixteen minutes may lead to the more accurate test of death in the human being and of the saving of many lives. In eleven out of twenty-three experiments of massage of the heart after sixteen minutes of apparent death, Dr. Kemp has succeeded in restoring dogs to life, and thinks that in human beings under similar conditions the proportion of restorations would be far greater. In the case of the dogs on which Dr. Kemp experimented all had been placed under the influence of chloroform. By the use of delicate instruments their heart beats and respirations were carefully noted and automatically charted, and when both respiration and heart beats had ceased so far as the chart showed, the experiment and restoration were begun. Dr. Kemp makes a small incision over the region of the heart and inserts two fingers, but instead of massaging the heart in regular beats, he imitates the double beat when it is working under normal conditions, as shown on his chart by use of his apparatus. The vital spark remains active, he believes, and he merely fans it into new life by massaging the heart. Dr. Kemp's experiments of this character for more than two years and the results have been watched by leading surgeons who have anxiously awaited his final report, and it is their opinion that he has taken a long step forward in the process of resuscitation, and while it may be called for only in exceptional cases, it may still lead to the saving of many lives.

REJUVENATION.

THE Rosecrutians, as sketched by Bulwer in the the greatest of his novels, "Zanoni," believed that by a long process of training human life might be prolonged to an unlimited extent, and the same claim by the students of the occult in India is made; but the process of rejuvenation can only be reached by that perfection in life in which the evil is so far eliminated that the higher spiritual forces are permitted to exert a controlling influence. But the dream of the Alchemist that there is but one elementary substance in nature from which the seventy now supposed to exist are only compounds and might be transmitted into gold, and what was still more important, the discovery of an elixir of life which would abort death and old age and endow human life with perpetual youth is still as far as ever from being realized. Brown's Sequard's "elixir of life," from which so much was anticipated by that brilliant man of science and the recent discoveries in the same line announced with the flourish of trumpets have proved but theories only.

Quite recently Professor Lucien Daniel submitted to the Academie Francaise his investigations, in which he presented a strong array of facts to show how the ageing and decaying of plants so characteristic of the organic world may be combatted. He has not yet extended his investigations upon this subject to man, but we are thankful for the light he has thrown upon rejuvenation in plants and trust his future labors may be crowned with as much success as those which have already marked his researches. Professor Daniel calls attention to the well known fact that by means of various methods certain peculiarities of plants may be modified. Through methods which he points out a large number of plants, such as roses and strawberries, can be made to blossom and bear fruit twice within one year. It was found that the influence of grafting produced important changes in the duration of life and the character of the scion. In the grafting of tobacco scions upon tomatoes the tobacco from a plant lasting one year was turned into one that lasted two years, though it did not begin to bloom until the second year. Various kinds of beans were grafted upon one another and from the seed a new variety was obtained, blooming and ripening twice a year. In studying the question whether it was possible to rejuvenate an old decaying plant by grafting upon a young plant he experimented upon scopolia carniolica, which belongs to the same family as the night shade, potato, henbane and tomato. As a rule, it begins to decay as early as May, at a period when the tomato is still growing and in full development. At that time he grafted the decaying sprouts of the scopolia upon the young tomatoes with the result that the former showed new life, got new sprouts, were covered with foliage, and in short turned a new green and strong. Some of these even bore fruit in the spring.

CARBOLIC ACID IN SMALL POX.

MR. Jas T. Neech reports from the *Lancet* remarkable results from the use of pure carbolic acid in small pox. The acid was applied with camel's hair brush to the eruption over a certain area of the body each day, the face and head being selected for the first day. The acid was tested in different stages of several cases, both mild and confluent, and the result was always the same. An arrest of the disease in the papular vesicular or putular stage, the second supperated stage abated, the pitting prevented and the infectiousness of the patient diminished. The vesicles dry up into crusts without becoming fully pustular, the contents of the vesicles become absorbed and the epidermis enclosing them scaled off.

To prevent pitting from small-pox, says a foreign exchange, the patient should be protected from the blue and violet rays of light. This can be done by allowing no light to enter the room except through red glass. In this way the blue and violet irritating rays of light are excluded.

BIBLIOGRAPHICAL.

DISEASES OF THE STOMACH.—By Dr. F. Riegel, of Giessen. Edited, with additions, by Charles G. Stockton, M. D., Professor of Medicine in the University of Buffalo. Handsome octavo volume of 835 pages, illustrated, including 6 full-page plates. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $5.00 net; Half Morocco, $6.00 net.

This volume, like the others already issued of Northnagel's Encyclopaedia of Practical Medicine, under the direction of its American editors, is thorough and complete.The importance of examining the stomach's contents in diagnosis and the various methods of obtaining the contents and performing the examination are discussed with the accuracy and clearness that spring from wide experience. Full consideration is given to the hydrochlorate question as a factor in the pathology of stomach diseases, the latest views having been incorporated by the editor. Particular attention has been accorded disturbances of motility and their influence in the disturbances of secretion. It is evident that careful study has been devoted to the subject of impairment to the absorptive powers and the significance of gas fermentation has been emphasized. The eminent editor, a recognized authority on diseases of the stomach, has added to the already excellent German text his own extensive experience. The work for scientific excellence and completeness has no superior. It is only just to say that in mechanical perfection each volume of the encyclopaedia is all that could be desired.

SURGICAL EMERGENCIES: THE SURGERY OF THE HEAD. By Bayard Holmes, B. S., M. D., Professor of Surgery in the University of Illinois, Professor of Clinical Surgery in the American Medical Missionary College, Chicago; Attending Surgeon The Chicago Baptist Hospital. New York: D. Appleton & Co., 1903. Octavo pp. 569.

In this excellent text-book the author has placed at the beginning of each chapter the motive for the study under consideration, thereby greatly enhancing the value of his work.

The text is practically and systematically arranged in the interest of the student, and every possible device is employed to secure the most intense and lasting impression. The book bears evidence of having been produced by an experienced teacher, and students as well as general practitioners will find in it what they require in its line.

UTERINE AND TUBAL GESTATION.—A Study of the Embedding and Development of the Human Ovum, the Early Growth of the Embryo, and the Development of the Syncytium and Placental Gland. By Samuel Wyllis Bandler, M. D., Instructor in Gynecology, New York Post-Graduate Medical School. Illustrated by ninety-three drawings. New York: William Wood & Co., 1903. Octavo pp. 159. Price, $1.50.

A portion of this little volume has already appeared in the pages of the *American Journal of Obstetrics*, but here we find additions to bring the subject to date. An attempt has been made to aid in the solution of many doubtful problems, including the probability that the placenta is a gland with potentials of great importance from the standpoint of secretion.

The author realizes that his personal views must stand or fall in the light of future investigation, but many original suggestions are made for the purpose of exciting observation in this important and in some respects vaguely understood subject. The book will be found valuable to the student in this department of medicine.

THE CARE OF THE BABY. A Manual for Mothers and Nurses, containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease. By J. P. Crozer Griffith, M. D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Physician to the Children's Hospital, Philadelphia. Third edition. Thoroughly revised.. Handsome 12 mo. volume of 436 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Co., 1903. Cloth, $1.50 net.

Upon the care of the baby, its feeding, clothing, atmosphere, exercise and surroundings depends much of the comfort of the nursery and the health and development of the child. Much of bad habits in after life, of sickness and death, of faulty mental and physical developments can be distinctly traced to errors of improper care during infancy. We know of no better book as a guide to the nurse and mother than this manual of Dr. Griffith, and should be glad if it could find its place in every household. The work has been so popular that a third edition has been called for in a short time after its first publication. The edition has been thoroughly revised and brought fully up to the present time.

PRACTICAL POINTS IN NURSING.—For Nurses in Private Practice. With an Appendix containing Rules for Feeding the Sick; Recipes for Invalid Food and Beverages; Weights and Measures; Dose List; and a full Glossary of Medical Terms and Nursing Treatment. By Emily A. M. Stoney, late Superintendent of the Training School for Nurses, Carney Hospital, South Boston, Mass. Third Edition, Thoroughly Revised. Handsome 12 mo. of 458 pages, fully illustrated, including 8 colored and half-tone plates. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $1.75 net.

The title of this work fully sets forth its general scope. The first edition showed such careful scrutiny and such a minute knowledge as to receive general commendation. It is enough to say of the pres-

ent edition that it reflects the latest advances in the progressive profession of nursing. By the extensive revision much of the volume having been rewritten, the usefulness of the book has been greatly extended.

The *Quarterly Journal of Tuberculosis,* edited by Karl von Ruck and Silvio von Ruck, Ashevile, N. C., presents in its April issue a rich table of contents by some of the ablest specialists in the world. The *Journal,* the subscription of which is $3 a year, merits a large circulation. Notably among the valuable articles is one by Dr. Karl von Ruck, in which he gives the report of 309 cases of tuberculosis, with remarks on classification and treatment employed. These cases were treated in the Winyah Sanitarium at Asheville during the years 1901 and 1902, and are properly classified with the result of treatment in each case.

The code of Hammurabi is the oldest collection of public laws that has yet been discovered. It is a reflection of the social conditions existing in Babylonia 4,000 years ago. The jurist of to-day will recognize in it most of the fundamental principles on which our social legislation is based.

An American edition has been issued under the auspices of The Records of the Past Exploration Society, translated from the German by Dr. Otto Sommer, of Washington.

THE MEDICAL CRITIC INDEX MEDICUS, 1902. New York, 154 East 72d street. We are in receipt of the initial number of this useful and time-saving publication. Upon a cursory examination the work seems to have been carefully done, barring some errors, which may be corrected in the future with more experience.

We hope there may be sufficient interest shown to continue the publication.

CORRESPONDENCE.

SHALL WE TELL THE TRUTH OR LIE?

To the Editors of THE MEDICAL TIMES:

Dr. Richard C. Cabot, of Boston, has lately published an article on this subject, in which, with reference to the effect upon the patient and his family, he inclines strongly to the side of truth, even when that truth is terrible in its suggestions. Little can be added to what Cabot has said, except the multiplication of instances, and yet we must grant that no absolute rule can be carried out. Often it is better to be perfectly frank with the patient's principal representative—that is, the friend or relative of best judgment, not necessarily the head of the family or the nearest relative—but to let that person assume the responsibility of informing the patient himself—or herself—or of withholding such information. When, however, the outcome of the case is inevitably fatal, so far as human judgment goes, it seems that every patient should be informed of the approach of death, unless he is in such a mental state as to be non compos. There are matters of importance, both spiritual and temporal, the latter including social and business problems, which every one wishes to settle before leaving this life. It is assuming a heavy responsibility to withhold this opportunity from a dying man. While it is decidedly old-fashioned to consider the religious aspects of the problem in a medical paper, we must remember that the only philosophy which construes death as particularly undesirable is that form of orthodoxy—so considered in the most diverse theologies—which attaches the most importance to ante-mortem preparation. As a rule, patients are fully aware of the approach of death and accept the fact with equanimity, whatever their religion or mode of life.

Another class of cases almost without exception demands the patient's decision, after a full understanding of the conditions present and the risks to be assumed. Such cases are those in which the relative merits of operative and medical treatment must be weighed or in which a result, ordinarily fatal, may perhaps be rendered more favorable by some new method of treatment, as yet sub judice or involving a risk of its own. Provided the patient is compos mentis, in the practical sense, he must, himself, decide the question. If the patient is a small child, an insane person or one so weakened by sickness as to be incapable of forming an intelligent opinion, his family or friends must decide for him. If he has no family nor friends, at least not within call, the decision should be reached after medical consultation, in which the various possible preferences as to treatment should be equally represented.

On the other hand, it is usually both expedient and humane to keep the patient and his family in ignorance of a necessarily fatal outcome or the worse catastrophies of blindness, deafness, paralysis, insanity, etc., during the early stages of the process. Later, the case may be dealt with precisely as in the first category considered. To protect himself, however, it may be well for the physician to communicate his prognosis to some relative or friend who will not be too personally affected, or to file a written and sealed opinion with his attorney.

The responsibility of the family physician and of a consultant or of a specialist to whom the case is referred, or who is independently consulted, are somewhat different. We recall an instance in which a patient sought advice as to the operability of a gastric cancer and was most unfavorably affected by the advice against operation which, necessarily, implied a bad prognosis. Often a patient comes to the specialist, well informed as to the general nature of the diagnostic and prognostic problems concerned, demands a perfectly frank statement as to the outlook and best means of relief, and yet is not only psychically and physically depressed by an unfavorable verdict, but subjects the physician to the severest censure on account of the expression of the truth. We recall an instance in which a patient practically demanded a guarantee of cure by medical treatment and in which the advantages of surgical intervention

had already been discussed with the family and the patient. Yet, because the physician thus cornered, explained that medical treatment could not possibly insure an absolute cure and urged operation which was by no means especially hazardous, the patient fell into a most unfortunate mental state, discharged the physician, and the latter was unable to collect for his services and was actually threatened with a suit for malpractice on the ground that his frankness had injured the patient.

Such cases, it seems to us, teach no positive lesson. Under many, perhaps most, circumstances, the family physician is warranted in assuming the responsibility of deciding what is best for the patient. The specialist or consultant, on the other hand, is usually employed, not merely to prescribe a course of immediate treatment, but to establish a diagnosis and a prognosis. His fee is the payment for an opinion, and if the former is honestly earned, the latter must be honestly given. So, too, when the regular attendant is definitely and explicitly required to state what he can accomplish and what the patient's prospects are, he is not justified, under any ordinary circumstances, in deceiving the patient or his representative, even in the interests of humanity. It may, however, be well to suggest that the family physician should not so thoroughly prepare the patient to weigh the alternatives presented that the consultant is forced either to lie or to give an opinion which amounts to a death warrant, in case of an unfavorable decision. So, too, the patient should understand, in advance, that some measure of responsibility attaches to himself and that he cannot demand the truth, "whatever it may be," and still complain if that truth happens to be unpleasant. Not only can no general rule be laid down for the government of the physician, but no amount of tact and caution can always secure a pleasant exit from a dilemma. We have discussed the question of operating in a neglected case of gangrene of the appendix with the patient himself and have had that patient weigh the probabilities and decide in favor of the greater of two slight chances of life, with all the calmness and fortitude of a martyr. We have had apparently stronger men so well informed that deceit was out of the question, whatever attitude we might assume, demand to be relieved of their suspense at any cost and have had them turn coward and malign us for telling the truth. In some diseases and in some patients it is possible to depend upon ignorance of technicalities. But the great majority of the intelligent laity understand surprisingly well the real issues that confront the physician. We recall a friend—not a patient—who was attended by a half-educated physician who sought to exploit his own skill by making a partial examination of the diagnostic benefit to be derived from a bacteriologic examination of the sputum. When he had finished, our friend criticized his description, detailed the steps in the process and predicted the discovery of the tubercle bacillus. Even those who have had no special scientific training usually understand the significance of grave pulmonary and renal symptoms of those connected with the appendix, and they usually know only too well what is to be expected in the way of a prognosis.

Impertinent questions by curious persons who have no right to know the diagnosis or prognosis of a case are often best met by a straightforward lie, rather than by a refusal of information or an attempt at prevarication. This is especially true in regard to venereal disease, pregnancy, insanity or other troubles in which the standing of the patient is at stake and in which a refusal of an answer or an evasion of a question will often lead to the conclusion that the physician is trying to conceal something detrimental to the patient's character.

As to the moral problem concerned in the matter of truth or falsehood, we believe that prevarication is more dishonest than a direct lie—it is virtually an untruth and the prevaricator is not only essentially a liar, but a sneak. In general, the truth or a falsehood should be used according to the interests of the patient. But the physician should discriminate clearly according to the nature of his employment—is he paid to look after the interests of the patient and his peace of mind or is he employed simply to pass upon a question of fact? As has been intimated, the problem is usually different according to whether the physician is the regular medical advisor or is called in as a consultant or an expert for a particular diagnostic and prognostic problem.

A. L. BENEDICT.

Buffalo, N. Y., May, 1903.

DANGERS FROM FOUL AIR.

To the Editors of THE MEDICAL TIMES:

At this season of the year the mild weather gives us very forcible information as to the sanitary conditions of our public halls, churches and other places of meeting. Let any one enter a church or hall immediately after the congregation has dispersed, he will notice how nauseatingly foul the air is, and how totally unfit for purposes of respiration. But more important it is to consider that out of the congregation who have been inhaling this foul air many will be actually poisoned in various degrees of injury, from a mere headache to severe systemic disturbance. Sometimes the exposure of this poisoned air will result in a fatal pneumonia. Lassitude, depression of spirits, loss of appetite and general malaise are, in a large proportion of cases, almost certain after exposure to such an atmosphere. When we consider the injury resulting from a business standpoint, the criminal negligence exhibited by those in charge of these buildings is apparent; but more detrimental than a pecuniary loss of income is the decided damage to health. Monday is the day in which ministers are supposed to show the effects of Sunday—and much of these ill effects attributed to Sunday are wholly preventable, and are caused by the neglect of the ordinary laws of sanitation. If we look about in the towns where we are living, and try to find one public building, school house, church or theatre where

any system of rational ventilation is insisted upon or carried out, it will indeed be a revelation. Here and there we discover more or less feeble attempt made at opening, for a very little distance, a window or two, but it has hardly any appreciable effect in freshening the atmosphere. The foul odors peculiar to many human beings huddled together are ever present, week in and week out, month after month, and year after year. Whatever the spiritual or intellectual value there may be of this huddling human beings together, the physical injury to the community from the foul air which they absorb is worthy of more serious consideration. To begin with, our homes do not receive the amount of fresh air required to maintain normal health. Coming into almost any house after walking in the fresh air, this statement is easily verified. In the writer's experience, after sleeping for some weeks in the open air on the frontier, upon going into quarters the annoyance and sense of being smothered became almost unendurable. Those housekeepers who have their own homes are more apt to look after matters of ventilation than those unfortunate persons whose only homes are two or three rooms in a flat, boarding house or hotel, where, generally speaking, very little attention is given to ventilation. We sometimes hear of the good physician of long ago who, upon entering a room where the windows were made fast and where, as might be expected, the air was foul and poisonous, broke out a pane of glass with his cane, to the surprise and consternation of his patient. Now, that man was considered a crank, and to-day almost every one who has a wholesome fear of foul air is frowned upon as a freak or a kicker! In our large churches, and more especially in the basement of these churches, where hundreds congregate in the early morning, the air is so foul and detrimental to health that the devout workman suffers all the rest of the day from an indolent, logy condition which interferes with the discharge of his duties, and acts as a deterrent in his efforts to support his family. Children in the school rooms become restless or dull and listless, and incur the fault-finding of their teachers, who themselves may be out of sorts from the inhaling of a devitalized or poisonous atmosphere. It is very easy to understand how significant is the injury which millions of our inhabitants have received to-day in their praiseworthy efforts to attend the services of God! Surely their devotion deserves a different reward. Now, the ills which flesh is heir to are mostly preventable, and this tremendous amount of harm which results from the ignorance or carelessness of those in charge of our public meeting places is decidedly preventable and should be regulated by sensible, well-directed laws, and by a system of building inspection at frequent intervals. In every church, immediately after the services, more particularly after funerals, all the windows should be opened wide, and a clearing out of the foul air at least attempted. The sanitary management of our cars, railway stations, churches, halls, theatres and school houses should receive suitable attention, and if this were done honestly and faithfully, a vast amount of loss of business, injury to health, and even loss of life would be averted. The best way to begin in a matter of this kind is to arouse public interest in what is needed, and of the dangers resulting from the neglect of such obvious laws of health, and this can best be started by members of our profession. P.

RETROSPECTIVE THERAPEUTICS.

Cryoscopy.—This is a term which occurs frequently in current literature and is descriptive of a valuable diagnostic procedure, yet apparently it is not to be found in any dictionary of medicine or work on urinary examination, diagnosis or general medicine. In Hektoen and Riesman's work on Pathology it is defined as follows—the fact being first pointed out that in the course of disease of the kidneys the urine is poor in solids and especially in nitrogenous compounds: "While the diminution of solids can be estimated to some extent by quantitative chemical analysis, it is far more easily and certainly determined by a physical method, which consists in a determination of the freezing-point of the urine—the method known as *cryoscopy*. This was introduced into medicine by Koranyi and by Caspar and Richter [in 1901]. The freezing-point of any liquid is governed by the number of molecules contained in solution; the quality of the molecules is not of consequence, except that those of very large size—albumins and other colloids—do not influence the freezing-point to any extent. The freezing-point, therefore, is an index of the molecular concentration of a liquid, and also of the osmotic pressure or tension, since this is always proportionate to the molecular concentration. Normal urine has a freezing-point from 1.3 degrees to 2.3 degrees C. below that of distilled water. Nephritis and other morbid states of the kidney cause this depression of the freezing-point below that of distilled water to be lessened, indicating that there is a diminution of solids, or hyposthenuria."

Continuous Baths in Surgery.—Excellent results in the use of the continuous bath in lacerated wounds and burns are obtained by the following methods (*Amer. Med.*):

The water should be clean, preferably running, warmed to about the body temperature, and should have a specific gravity approaching that of blood serum. In addition to adding warm water every half hour, it is necessary to change the entire volume of water three or four times in twenty-four hours. The specific gravity may be raised to approximate 1.028 by the addition of one drachm of common salt to the quart of water. Boric acid may be added for its antiseptic influence.

The advantages claimed for this method are: (1) That the warm water is an anodyne, (2) that the afflicted member, being floated by the water, may be comfortably moved by the patient, (3) that the odor from offensive wounds is controlled better than by any other way, (4) that it constitutes the most perfect drainage obtainable.

The bath should be kept up intermittently or continuously until the wound is protected by granulation tissue.

Cuttle-fish Bone in the Treatment of Intestinal Catarrh.—George Herschell, M. D., Lond., in a letter to the editor of the *International Medical Magazine,* refers to the use of powdered cuttle-fish bone in the treatment of chronic diarrhea and dysentery, especially those, such as hill diarrhea and sprue, which are acquired in tropical climates. By this means many cures have been effected in cases of chronic diarrhea which had resisted all other means of treatment. In cases of sprue, the writer has seen several remarkable cures. It appears to act in a mechanical manner upon the intestinal mucosa, and although its use is purely empirical, it deserves a trial in any case which resists more usual and orthodox measures. During its use castor oil should be given every two or three days.

Hypnotism in the Morphine Habit.—In the *N.Y.Med.Jour.* for May 17, 1902, S. A. Agatston reports the case of a woman of thirty-eight years who was accustomed to take twenty-five grains of the drug each twenty-four hours. This was gradually reduced within two weeks to half a grain and then within another week to zero. The patient suffered intensely with the usual symptoms, which all the remedies in common use failed to relieve. The author then tried suggestion, instructing the patient to sleep for eight hours, awaking at a certain hour. This plan persisted in each night utimately led to a perfect cure, and is to be recommended in similar cases.

The Clinical Value of Cryoscopy.—Dr. Gaetanofllorio (*Gazz. Degli Ospedali E Delle Cliniche,* July 6, 1902) concludes as follows as regards the clinical significance of cryoscopic examinations: The cryoscopic examination of urine gives very important clues as to the functional state of the kidneys. The urine of twenty-four hours should be collected for the freezing test, but it is not necessary to obtain the urine from each kidney by ureteral catheterization. The freezing point of urine taken from the bladder in a case of unilateral renal disease is different from that of a case in which the lesion is bilateral. When one kidney is diseased, the freezing point does not reach below 0.95, while, when both are diseased, it is nearer to 0.45 or 0.30. The proteid substances, such as albumin, pus, etc., do not take part like the crystalline substances, in influencing the freezing point in the urine, and therefore cryoscopy offers a means of differentiating most readily cystitis from pyelitis and pyelonephritis. This fact also explains the independence of the freezing point from the specific gravity, which may be increased by the proteid substances. The freezing point of blood is not proportional in any way to that of urine, as the toxic substances in the blood are not wholly excreted by the kidneys alone. The loss of renal permeability through disease would influence the freezing point of blood only if the other emunctories were also impaired. The formulae of Claude and Balthazar, whereby the relation between the chlorides of the urine and the organic substances excreted by the kidneys can be established have no application in surgery, as the chlorides vary with the amount of chlorides taken in, and with the intensity of intestinal fermentation. Cryoscopy has no application in surgical conditions which do not involve the kidneys directly or indirectly.

The Electric Enema.—The use of electricity in the treatment of chronic constipation due to atony of the lower bowel has long been recognized, but perhaps never to the full extent it deserves (*Med. Press & Circular.* And, indeed, in the intra-rectal use of the galvanic current there was some inconvenience and danger if proper precautions were not adopted. The most important of these risks was the formation of eschars in the bowel, owing to prolonged current applied at one point. M. Boudet, of Paris, has, however, recently introduced a method of application which entirely does away with this risk, and at the same time accomplishes a wider distribution of the current than was possible by other methods. The apparatus used is simple, and the distinctive feature of it is the rectal electrode, which is hollow, and through which an enema of water is given before the current is turned on. The metal itself is entirely protected by rubber, so that the current of electricity only reaches the bowel after passing through the contained mass of water.

Calcium Chloride as a Hemostatic.—Dr. Bertignon (*Med. Press,* Nov. 26, 1902) furnishes a series of cases in which chloride of calcium proved to be an excellent hemostatic. It succeeded where perchloride of iron, antipyrin, ergotin, and hot injections failed. It is indicated in hemorrhages of every kind, and in all maladies presenting hemorrhagic complications. Hematemesis, hematuria, enterorhagia are arrested rapidly by CaCL. Bertignon cites the case of a patient suffering from acute general purpura cured by this remedy, where ergotin, perchloride of iron, citric acid, lemonade, etc., were tried without success.

Bertignon says that of all the coagulating solutions known, chloride of calcium was the most easily borne by the stomach.

For intestinal hemorrhage complicating a case of typhoid fever, enemas of a drachm of the salt, and half a drachm given by the mouth, with a little opium, have yielded very good results. It is especially indicated in hemophilia.

The best formula, according to Dr. Bertignon, is chloride of calcium (crystallized), ZJ; syrup of opium, ZIIIJ! water, ZIV. To be taken every twenty-four hours, and renewed as long as the hemorrhage lasts.

New Zealand as a Health Resort.—The value of this far-away land as a haven of rest is commented on by G. F. Lydston (*Phil. Med. Jour.,* Jan. 10, 1903). New Zealand is almost as large as Great Britain and can be directly reached by steamer in three weeks. He believes that the country is not properly appreciated in America. The latitude is

about that of Spain, France and Italy. The climate is ideal, the rainfall abundant, and the soil fertile. The islands, three in number, are volcanic in origin and mountainous in their general aspect. On North Island is a belt of thermal springs about 150 miles long and 25 miles wide, consisting of innumerable geysers, hot springs, mud baths and mineral springs. There are numerous well-appointed spas and sanatoria, all under government control and supervision, and the rates are less than at any other health resort within the author's knowledge. The mineral springs, with the exception of the sulphur, are usually saline, feebly alkaline and heavily charged with CO^2. Great claims are made for all of them in gastro-intestinal, renal and hepatic disturbances. The hot baths, at 104 degrees to 105 degrees F.. at Hanmer, one of these resorts, can be taken with perfect freedom twice daily for half hour at a time, which is in marked contrast to our own system at Arkansas Hot Springs, where only a seven-to-fifteen-minute bath at 94-98 degrees F. is allowed. The author believes that this is one of the most wonderful countries in the world, whether viewed from the standpoint of the physician or the lover of nature.

Neurasthenia and Its Treatment.—Neurasthenia is not a morbid entity, but a combination of conditions, on the recognition of which the diagnosis and prognosis depend. It is a persistent state of enfeeblement of the nerve force, due to a nutritive derangement of the nervous elements, as Gilles De La Tourette has said there is no such thing as neurasthenia, but rather a neurasthenic state. There are true neurasthenics and false or hereditary neurasthenics. Acording to C. N. De Blois (*Rev. Med.*, Nov. 12, 1902) the objective symptoms of true neurasthenia are slight or none, and the subjective distinctly psychical. They are: (1) Headache, frontal or temporal, like a heavy helmet on the head, and lasting only during the day time; (2) vertigo, a sensation of cerebral emptiness rather than real dizziness, with feebleness of the lower limbs; everything appears dull and gray, and muscae volitantes are seen, the oculist being frequently consulted; (3) pains, localized at the back of the neck and along the spine, and especially at the sacrum; (4) in this latter situation being accompanied by fatigue in the legs; (5) no anesthesia, no abolition of reflexes, no urinary troubles; (6) much lassitude, often cannot fix the attention, cannot read; (7) insomnia, a most frequent and important symptom; (8) gastro-intestinal disturbances, poor appetite, slow digestion, heaviness in stomach during digestion, rarely vomiting, gurgling of the intestines; the alimentary tract shares in the general nervous depression; (9) mental condition sometimes elevated, usually depressed, feebleness of the will, disinclination to work, subjective sensations of impaired function in various organs. The brain remains clear. (10) There is a definite cause to be found for the condition, a distinction from false neurasthenic states.

The treatment consists of a cold douche in the morning every second day, with a warm douche at noon, and on alternate days a warm douche in the morning and a foot-bath at noon. A bath with static electricity for fifteen minutes three times a week, injection of artificial serum every second day, and internally iron, bromide of strontium and trional. Hygienic and moral influences are necessary adjuncts.

The Therapuetics of Gelatine.—Gelatine (says the *Medical Press and Circular*), injected into the circulation or administered by the mouth, exerts a marked effect in promoting the plasticity of the blood in the curious condition known as hemophilia, and, according to Dr. Lancereaux, of Paris, it is also productive of benefit in albuminuria and diabetes. Unfortunately, the effect only lasts so long as the treatment is maintained, but, as the doses of gelatine required are comparatively small, and as it is devoid of any collateral effects of a disagreeable nature, there is no obvious reason why its use should not be persevered with in the same way as that of the thyroid extract in myxedema.

RETROSPECTIVE DIETETICS.

Diet in Acute Inflammation of the Kidneys.—When a case of acute inflammation of the kidneys first comes under treatment it is best to enjoin rest in bed, to withhold all food for twenty-four or thirty-six hours, to give water freely, and to empty the alimentary canal by provoking purgation. Milk should be given, at first in small quantities, at intervals of two hours. The quantity must be increased gradually until two quarts are taken daily. Intolerance of milk is often lessened or removed if, when a milk diet is begun, it is administered in very small amounts, one or two ounces at a time, and the amount is slowly increased. Milk, moreover, is less likely to produce gastric distress, if it be sipped instead of being drunk rapidly. When the urine becomes copious and the amount of nitrogenous matter voided in twenty-four hours all that can be expected, farinaceous foods may be prescribed in addition to milk. In a few days some of the sweet fruits and simpler vegetables can be given. When albumen disappears from the urine an egg can be tried. During the time that albuminous foods are being added to the patient's dietary, close watch must be kept upon the effect of it, the quantity of urine, the amount of daily nitrogenous excretion, the amount of albumen, and number of tube-casts, if any, found in the urine. When an egg can be taken without harm, white meats can be tried, such as the breast of chicken, a small piece of boiled ham, or perfectly fresh fish. Red meats, rich in extractives, should not be eaten until recovery is established.

What Shall We Feed Women After Confinement?—The advice given years ago, by one who had large experience in this particular line of practice, was to give the puerperal patient as good nutritious food as she has an appetite for, and can easily digest. The woman exhausted by labor needs rest. As soon as she wakens give her a cup of good beef, chicken or mutton broth; as soon as the general

condition of the woman and the appetite call for it, no matter whether it is the second or ninth day, gradually give solid foods—mutton chops, tenderloin of beef, poultry or game. Patients often eat a good piece of tenderloin steak, the day after delivery, with decided relish and with good results. A nutritious diet of this kind has a decided tendency to prevent puerperal women from suffering from nervous exhaustion, sleeplessness, and many annoying and persistent nervous symptoms, due to the excessive demands made on the system for the restoration of the uterus to its normal state, and for the keeping up of the function of lactation.

Fruit Seeds and Appendicitis.—Many very intelligent people are deterred from swallowing the seeds of berries, grapes and other fruits, lest the lodgment of these small bits of indigestibleness may induce that dreaded accident, appendicitis.

This fear, says the *Dietetic and Hygienic Gazette*, is utterly baseless, since the healthy appendix is protected by a valvular arrangement which prevents even the smallest of seeds from entering it. It is only after inflammation has already destroyed its normal protection that any foreign substance can gain access to it.

To feel compelled to eschew all seedy berries and fruits is to seriously curtail one's dietary, and it is entirely unnecessary. In fact, the free and constant use of ripe berries and fruits of all kinds is one of the best preventives of this dangerous disease. Fruit-eating prevents or helps to overcome constipation, and constipation is the most prolific cause of appendicitis.

The physician should thoroughly disabuse his patients of this mistaken notion. All the smooth seeds are harmless.

Banquets a Relic of Barbaric Times.—Says Boardman Reed (*Intern. Med. Magazine*): However doctors may honestly differ as to the amount and kind of proteids which should enter into a normal diet or as to the usefulness of the food accessories taken in moderation and at the regular meals, there are probably few, if any, recognized authorities in dietetics who would not condemn *in-to-to* the practice of supplementing the usual three or four daily meals occasionally by an elaborate feast, beginning with raw bivalves and running the whole gamut of proteids in the forms of fish, soup, roasts and entrees, topped off with ice-cream, cake, candies and nuts, and washed down by copious libations of alcoholic beverages in bewildering, not to say fuddling, number and variety.

To be sure, all the guests are not obliged to eat or drink all these things, but as to the customary last course, the cigars, even the non-smokers cannot escape inhaling the fumes which generally fill the room, and they thus all share in the results to some extent, willy nilly. Moreover, it is just this smoking feature of the modern banquet which renders it in one respect more barbaric than the feasts of the early Britons and the redoubtable knights of the middle ages. They did not often banish the women from their orgies, so that the latter were able to exert upon their lords and masters whatever of a refining influence they could; but in these days of civilization, of science and of the highest culture, we exclude the fair sex entirely from the board when we set about gorging ourselves in a thoroughly up-to-date manner, or, what is quite as bad, send them out of the room before the only redeeming feature of the formal dinner begins—that is the feast of reason and flow of soul—the witty speeches.

The distinguished Viennese master of bloodless surgery, when in this country recently, called a halt upon our wining and dining customs, in so far at least as regarded himself. Immediately upon his arrival in Philadelphia, after he had endured the round of dinners generously provided for him in Chicago and other Western cities, as well as in Washington and Baltimore, Dr. Lorenz went into the subject of eating by announcing that any banquets which had been arranged for him must be called off. "No more banquets, thank you. I came here to do what I can for crippled children, not to eat myself to death."

Amblyopia Due to the Use of the Common Accessories of Diet.—Walter L. Pyle, in the *International Medical Magazine* (January, 1903), says that profound defect of vision may follow even the moderate use of stimulants in the daily dietary. Most prominent among the toxic amblyopias are those due to alcohol and tobacco. It is commonly believed that tobacco is the direct causative agent in most cases, the debility produced by the continued use of alcohol and general dissipation being predisposing causes. In considering the effect of tobacco on vision it is important to bear in mind the strength and quantity of tobacco used, the personal idiosyncracy, and the state of general health. The great essential in treatment is the discontinuance of both substances.

The chief symptom is a failure of central vision, both for form and colors. The patient complains of a mist before the eyes, which is most troublesome in a bright light. Peripheral vision may not be greatly altered, and there is not the same difficulty in seeing to walk about as is noticed in ordinary progressive optic atrophy. In certain cases taken early, complete abstinence may effect perfect recovery, but relapses are likely to occur if the stimulants are resumed. In cases in which the optic nerves are visibly blanched, the disease may be arrested and a partial recovery may occur. If smoking and drinking are persisted in, the amblyopia increases up to a certain point, and central vision is permanently lost, but complete blindness is not usual.

Cases of chronic amblyopia are on record in which coffee and tea have been considered the exciting agents. Excessive coffee-drinkers in the Eastern countries are said to frequently suffer from loss of vision similar to that seen in tobacco-amblyopia. It is said that experts employed in tea-warehouses occasionally suffer from marked visual defects. Casey A. Wood includes, besides tea and coffee, chocolate and strong cheese; and certain rich foods and strong condiments may be added.

The cases on record of sudden and profound amblyopia due to the ingestion of Jamaica ginger, flavoring extracts, essences, bitters, etc., may be attributed in most cases to the action of methyl alcohol used to cheapen the cost of manufacture. This is a powerful and often fatal poison with a selective action on the eye, and its use as a substitute for ethyl alcohol should be severely punishable by legal statute.

GLEANINGS.

The Ductless Glands.—Charles E. De M. Sajous, M. D., *Philadelphia Medical Journal,* March 7, 1903:

I. When the venous blood reaches the pulmonary alveoli, the marked affinity of the adrenal secretion in the plasma for oxygen causes it to absorb this gas from the alveolar air. The carbonic dioxid in the blood is thus forcibly replaced by oxygen and expelled with corresponding vigor. The red corpuscles, after this operation, bathe in an oxygen-laden medium, and their hemoglobin becomes converted into oxyhemoglobin.

II. The physiological function of the internal secretion of the adrenals is loosely to combine with the atmospheric oxygen in the lungs and to endow the bloodplasma with its oxidizing properties. The organic compound or oxidizing substance thus formed in the lungs we have ventured to name adrenoxin.

III. The anterior pituitary body governs the functional activity of the adrenals and is directly connected with these organs through the cervicothoracic ganglia, the splanchnic nerves and the semilunar ganglia of the sympathetic system.

IV. All general symptoms witnessed in disorders in which the blood is invaded by a person of any kind are, in reality, manifestations of overactivity, insufficiency or inactivity of the adrenals.

V. The thyroid gland, the anterior pituitary body and the adrenals are functionally interdependent and constitute a system, the "adrenal system," which has for its purpose to sustain physiological oxidation and the metabolic activity of all tissues.

VI. While the red corpuscles proved to be mere storage-cells for adrenoxin, the investigation showed that the white cells were the seat of the following complex process:

1. Neutrophile leucocytes form peptones which combine with adrenoxin to sustain general metabolism, *i. e.*, "the vital process;" myosinogen, which combines with adrenoxin to supply contractile energy to muscles; fibrinogen, which combines with adrenoxin to supply heat energy to the blood.

2. Eosinophile leucocytes form hemoglobin, which loosely combines with adrenoxin to insure its storage in erithrocytes.

3. Basophile leukocytes form myelin, the active principle of which, lecithin, combines with adrenoxin to develop nervous energy.

VII. The splenopancreatic internal secretion is represented by the trypsin which reaches the portal vein by way of the splenic vein (in which the greater part of it is formed) and continues in the bloodstream the cleavage processes begun in the intestinal canal.

The main function of the trypsin is to protect the organism from the effects of bacteria, their toxins and all toxic albuminoids, including vegetable poisons and venoms.

VIII. The posterior pituitary body, as the general center of the nervous system, was found to be the anterior pituitary body's co-center in sustaining the cellular metabolism of all organs. While the anterior pituitary body insured oxygenation of the blood through the adrenal secretion, the posterior pituitary body adjusted the functional activity of all organs through the nervous system.

IX. In pulmonary tuberculosis, direct infection of the lungs can occur through bacilli ingested by leukocytes in the intestinal canal. Contaminated milk and foods are, therefore, as active sources of infection as air-borne germs.

X. In the treatment of pulmonary tuberculosis, the indications are (1) actively to stimulate the adrenal system, (2) to supply alkaline salts to the organism. Adrenal stimulants will often prove inadequate if the alkaline salts are not administered simultaneously, while the use of alkaline salts without adrenal stimulants will prove unavailing, though perhaps beneficial for a time.

Trypsin will not act in the absence of salts.

XI. Fever is essentially a protective phenomenon. Therefore, to administer antipyretics is to defeat nature's effort to relieve the organism of pathogenic elements.

XII. Steadily, as the febrile process advances, the alkaline salts are consumed, and, being inadequately renewed, the vital and defensive functions are increasingly hampered until life ceases.

XIII. The power of the organism to antagonize the constitutional effects of pathogenic germs, their toxins and their poisons, is directly proportionate, all else being equal, to the functional efficiency of the adrenal system.

XIV. When a favorable reaction does not follow the use of the saline solution, it is because the adrenal system also requires direct stimulation, such as that afforded by strychnine, digitalis, etc., administered subcutaneously.

Production of Sex at Will.—J. S. Freeborn (*Can. Pract. and Rev.,* August, 1902) says that, after ten years' observation, he has come to believe that sex can be produced at will. His attention was first called to the question by the fact that mothers who were "two or three weeks over their count" invariably were delivered of male children. When the accouchment was premature, female infants could be looked for. This pointed to the possibility that the time of conception between the periods of menstruation might determine the sex. From notes on 500 cases, his prediction as to sex was verified in 98 per cent. when correct date of the last change was noted. His patients desiring boys who limited sexual connection to a period of ten days before the next expected change have never been disappointed in re-

sults. As he has never had any appeal for girls, he has not tried limitation of intercourse to the ten days following menstruation. Such a trial would, however, be interesting to make.

Harvard University is to have new medical school buildings which will occupy twenty-six acres of ground and will cost more than two millions of dollars, of which Mr. J. Pierpont Morgan has contributed one-half. The original plans show a building in five blocks, surrounding three sides of an open court, 520 by 250 feet in dimensions.

The total immigration in the port of New York for 1902, was 493,380, the largest on record. It has been said that the foreign population in New York with its churches, clubs, societies and other institutions, gives that city so cosmopolitan a character that one may worship in almost any language and swear in as many more as one understands.

The War Department has just sent to the Philippines 10,000 cars of a new kind of army ration called "roast beef hash." This hash is quite as good and appetising as any dish of hash served on the tables of well-to-do people. The hash contains a considerable proportion of potatoes and onions—ingredients of important value because of their healthfulness.

Archbishop Ryan, on visiting a small parish in a mining district, asked a nervous little girl what matrimony was, and she answered that it was a state of terrible torment which those who entered it are compelled to undergo for a time to prepare them for a better and brighter world. "No, no," remonstrated the pastor; "that isn't matrimony, that is purgatory." "Let her alone," said the Archbishop, "maybe she's right. What do you and I know about it?

But little stock is taken by oculists of prominence in the recent news from Paris that Professor Streus has discovered the secret of restoring sight to the blind. It is admitted that we do not see with the eye, but with the brain, the eye only serving to receive the image which the optic nerve transmits to the brain, but the statement that an artificial substitute for the optic nerve has been discovered is not thought worthy of serious consideration.

Typhoid.—Experiments are being conducted at Ann Arbor University, Mich., to discover a cure for typhoid fever. Six big tanks have been constructed with a layer of gelatine and on these 144 square feet of the fever germs are grown at a time. These living germs are scraped off, killed, and put in bottles. Two ounces of them would kill 70,000 guinea pigs. The object is, if possible, to extract the poison from the germ bodies, feed animals with it, and try to discover an antidote.

Andrew D. White, who has been resting quietly in Italy since his release from the cares of the German Embassy at Berlin, has just sent to *The Century Magazine* the first part of a manuscript upon which he has long been engaged, consisting of reminiscences of his diplomatic life. The present part covers his recollections of Beaconsfield, the Emperors William I and Frederick, Bismarck, Browning, and other famous European statesmen and writers. Further papers will include recollections of his recent embassy to Berlin.

—W. G. Sackett, a graduate of the University of Chicago, has recently undertaken a number of investigations upon the preference of mosquitoes for certain colors. He has found, so far, that red and black attract great quantities of mosquitoes. In his investigations he has used the culex mosquito. It is remarkable that no mosquito alights upon yellow. He therefore draws the conclusion that houses should be painted yellow and that yellow clothes should be worn to keep free from mosquitoes.

Prof. Lorenz referring to American nurses said: "Never till I came to this country have I known what a woman could be in the way of a nurse. In Austria they are women of any class, of any sort. They are women of little education. Here in America they are ladies—ladies! Never have I been so amazed. They are in aprons and caps, but they are educated, they are refined, they are charming. Never have I seen such a thing—never! You are so far ahead of us in this that I am lost in wonderment."

Dr. William Stephenson, in the Scottish Medical and Surgical Journal, states that in nearly twenty years experience, permanganate of potash gives more direct and reliable results than any other drug in menstrual troubles. He describes a case which had suffered from amenorrhea for fifteen months; another from dysmenorrhea and vascular weakness with distention of the veins in the leg; a third from dysmenorrhea, menstrual headaches, distended veins, and eruption on the face; still another had chlorosis at eighteen, phlegmasia dolens at twenty, for four years dysmenorrhea, menstrual headache and varicose veins. In all these cases permanganate was ordered in the form of pills, gr. ii, ter in die. In the great majority of cases, headaches are amenable to the action of manganese. Some time the headaches are of an intermenstrual type. In some cases it takes five, six and seven months before the beneficial effect is fully secured.

Quénu and Landel (*Bull. et Mém. de Soc. de Chir. de Paris*, No. 39, 1902; *Brit. Med. Jour.*) state that the results of experiments carried out by them during the last two years, have led them to the conclusion that oxygenated water used as a spray is the antiseptic agent of election for the disinfection of the air of operating rooms. Carbolic acid spray in such strength as can be tolerated by the operator is much less active and, indeed, but slightly superior to the spray of distilled water, although it acts more rapidly. Sublimate spray has more efficacy, but it has the disadvantage of exciting cough, and, moreover, it temporarily immobilizes the germs without destroying them. Again, condensation takes place rapidly, and the air not being saturated, the bacteria soon reappear in great number. Oxygenated water, it is stated, is not open to any of these objections. When present in large proportion it does not cause any inconvenience to the surgeon. When present in small quantity, as in less than 10 grams to the cubic meter, it assures the sterilization of air saturated with microbic germs. Unlike pulverized carbolic acid sublimate solutions it is not rapidly precipitated, and its spray rests in suspension in the air. As a disinfectant of solid surfaces oxygenated water applied as a warm spray has remarkable efficacy, as it quickly destroys the spores of bacillus subtilis with which it comes in contact, while sublimate spray fails to destroy the spores of the bacteria of anthrax. In the practice of the authors, the air of the theater is saturated with the spray of oxygenated water for some time before, but not during an operation.

MISCELLANY.

—To keep off mosquitoes, the advice of one who has tried it (according to *Health*) is to throw a piece of alum, about the size of a marble, into a bowl of water, and wet the face and hands and any exposed part lightly with it. Not a mosquito will, it is asserted, approach you.

—Dr. and Mrs. Christian A. Herter, of this city, have presented to Johns Hopkins University the sum of $25,000 for the foundation of a memorial lectureship in the Medical Department designed to promote a more intimate knowledge of the researches of foreign investigators in the realm of medical science. Each year some eminent worker in either physiology or pathology is to be invited to deliver one or more lectures at Johns Hopkins University, receiving as an honorarium the income from the endowment fund.

—A correspondent of the *Lancet* describes a simple method of producing local anesthesia for small operations. A solution is prepared consisting of adrenalin chloride, 2 drachms; cocaine, 5 grains; and water, ½ ounce. Lint is folded into a pad of four layers, soaked in the solution, and placed under a positive electrode. A large negative electrode is applied elsewhere, and a current of from 15 to 30 milliamperes is slowly induced and run for the space of from five to ten minutes. The surface may then be washed with ether, and any superficial operation performed painlessly and without loss of blood.

—A new site for vaccination has been recommended by T. Wilson Parry, M.A., M.B., in a communication to the *Lancet*. It is the space over the lower part of the sternum, between the breasts, the center of the area being a point on the horizontal nipple-line, midway between the two nipples. This site is especially recommended for physicians, because they can inoculate themselves readily, and in case of a successful vaccination, the doctor's work is in no manner interfered with by the impaired use of an arm or leg; all gland involvement is also obviated. It is also the most sheltered spot on the body.

—The architects in the service of the Prussian Government are now required to attend a two weeks' course of lectures on sanitary dwelling houses. The lectures are delivered by the official chief of the architect service, and by a physician, Prof. Kossel. The attendance at a single course is restricted to 20, and the lectures are given in the institutes of technology at Berlin and Hanover. The *Deutsche med. Wochenschrift* considers this arrangement a very important advance on the line of sanitation.

—That the State of Massachusetts has not forgotten the duty she owes to society and the medical profession is shown, says an Exchange, by the fact that the House, a short time since, refused to order to a third reading a bill authorizing the Boston Institute of Osteopathy to grant degrees. The attorney for the corporation stated that it was one of the foremostinstitution in the State, and had more students than the homeopathic and eclectic schools combined; also, that the institution in Missouri had more students last year than the Harvard Medical School. In spite, however, of his urgent plea and the testimony of several prominent signers, who had been saved by the laying on of hands, the bill was not considered worthy of a further reading, and the House passed on to the consideration of a bill allowing barbers to shave respectable and needy customers of a Sunday.

The Canadian *Journal* gives an account of Caesarian section, ten minutes after the death of the mother, in which the child was delivered alive.

—For keeping tools bright and free from rust when out of use, brush them with a preparation made by stirring enough red or black mineral paint into crude petroleum to make the mixture of consistency easy to spread. This can be applied with a brush made of a piece of sheepskin tanned with the wool on, or with any ordinary brush. It will prevent rust, and may be rubbed off readily, leaving the face of the tool perfectly bright.

—The bishop of Fano in north Italy provides for the association of cleanliness with godliness in his instructions to pastors; an example which might well be emulated in religious circles generally. In all churches, after feast days on which unusual numbers of people have congregated, the floors are to be cleansed with a sublimate solution 1-1,000. At least once a week pews and confessional benches must be wiped with a damp cloth, and the grating of confessionals washed with lye. The appurtenances of the altar are likewise to be cleansed with lye or sublimate.

—M. Armand Gautier announces in the *Comptes Rendus* that he has found that injections into the blood of minute amounts of sodium methylarsenate is a cure for malarial fever. He reports the complete recovery of nine patients who had contracted in Africa malaria of so severe a type as to be refractory to large doses of quinine. Blood-tests were made, and the disappearance of the specific hematozoa always followed the treatment; it also suppressed the anemia associated with malaria. The best dosage and means of administration, whether by mouth or hypodermatically, must be determined by further research.

—A major and surgeon of the army stationed in the Philippines writes that recently, when the chief nurse of a small base hospital in Southern Luzon was sent away, there was a great struggle among the five nurses remaining for the vacant position, which meant a distinct increase in pay. Each one of the five came to the office of the surgeon in charge, to show cause why she should be appointed chief nurse, and why none of the others was entitled to that distinction. The young Solomon in charge was "up against it," but gave the following decision: "Each one of you must write on a piece of paper her exact age, and send it sealed to me. The oldest woman will be made chief nurse." There is still a vacancy as chief nurse in a small base hospital in Southern Luzon.

—A Simple Chloroform Dropper is described in the *Jour. A. M. A.* for December 6, by Dr. Chas. S. White, who says he has used it frequently with great satisfaction: A piece of toothpick or a match stem is inserted between the cork and neck of the bottle, the rapidity of the flow being controlled by the tightness of the cork or the size of the splinter. The toothpick is then broken off close to the cork. It does not become occluded, and the number of drops each minute are about the same. It fills every requisite that the more expensive dropper does, and in some respects is far superior. Not unfrequently we are compelled to intrust the anesthetic to an inexperienced person, and we have a little less concern if we know that the chloroform can be given drop by drop only, and by no possible chance can be poured on in larger quantities. Further, we are often called on to administer anesthesia most unexpectedly; in those instances, this impromptu dropper is a friend in need. It may be given from the original container and without notching the cork, as is sometimes done, thus subsequently losing chloroform by leakage and evaporation.

THE SUCCESSFUL TREATMENT OF GASTRIC ULCER, WITH THE LATEST VIEWS ON PATHOLOGY.

BY G. R. JOHNSON, M.D.

WHILE gastric ulcer may occur at any age more commonly between twenty and thirty years, still it appears with considerable uniformity from twenty to sixty years of age. Males are more likely to suffer with ulcer than females; at least it is known to occur most frequently in males between thirty and forty; in females between twenty and thirty. Americans are supposed to be less susceptible to ulcer than English and Germans. Through exposure, anxiety, depression, lack of fresh air and damp dwellings of the poor, they suffer more with ulcer than the middle class, while certain occupations, as cooking, weaving, tailoring and cobbling predispose by causing mechanical injury of the mucous membrane of the stomach, while chemical injury from poisons and similar traumatisms, act as causes. Such bacilli, as the bacillus tuberculosis, may have a similar action, causing obstruction of a vessel, and ulcer result from disturbance of the local circulation. A powerful factor for the production of simple ulcer is anæmia, especially chlorosis, while certain diseases of the heart and blood vessels, as atheroma, amyloid degeneration, endarteritis obliterans, may lead to peptic ulcer. Ulcer sometimes results from chronic passive congestion of the stomach in cases of cirrhosis. Persistent vomiting, malaria, parasites—as trichina spiralis, diabetes mellitus, abuse of alcohol, and extensive burns of the skin—have been known to give rise to gastric ulcer.

In irritant poisoning the part is suddenly destroyed, while in injury of less severity, and in irritation, a congestion is produced and an ulcer results from excessive epithelial desquamation. In embolism the nutrition of the part is destroyed, and the succeeding degeneration leaves an ulcer, with a tendency for the vessel to degenerate centrally, or should a succession of embolisms occur, an enlarging ulcer results, with the result that healing is prevented or delayed indefinitely, there being no difference whether the obstruction be in the smallest arterial twigs running up from the submucosa between the glands of the mucous membrane or whether it be from atheromatous, amyloid or aneurismal degeneration of the vascular walls. The gastric juice acting on the part deprived of nutrition hastens the formation of an ulcer; especially in cases of the hypersecretion of hydrochloric acid.

In other cases, especially in the young, it may be that follicular hemorrhages and hemorrhagic erosions act as the cause. Here the gland ducts are packed with blood cells to the fundus; many punctate-appearing follicular hemorrhagic spots, may occur, and the loosened mucous membrane frequently suffers erosion. In this way large ulcers may thus originate, especially near the pylorus. Primarily this erosion is a necrosis of tissue, but eventually the character of the pathological change is altered, a proliferation of young cellular elements occurs, spreads to the deeper tissues, continually throwing more elements to the surface and genuine ulcer appears. Its growth is the result of the necrosis; the active process being the stage of proliferation with the formation of cicatricial tissue. When the ulcer is older the margins are thickened by a reactive inflammation at the periphery, forming a callous outline. In place of the peptic cells, cuboidal or cylindrical epithelium appears. Peptic cells are shrunken and separated from one another and the membrana propria; their contents are broken down and assume almost the appearance of hyaline degeneration. Single ducts undergo cystic degeneration. A rich vascular network, with an abundant small-celled infiltration, makes the submucosa decidedly broader and thicker. On account of these central necrotic and peripheral active processes the base of the ulcer may become firmly attached to the underlying tissue. Similarly the ducts of adjacent glands diverge so that their mouths are bent towards the ulcer, pouring their secretion directly into it. The hypersecretion of hydrochloric acid in gastric ulcer has been found in the majority of cases that the acidity increases with the degree of severity of the subjective and objective symptoms, reaching its height at the time of hemorrhage. The secretion is independent of food-taking, and returns to normal with recovery. They conclude that in chronic gastric inflammation both the central and parietal cells are increased in number, and that there is a consequent increase of both acids and ferments. The central cells, being less resistant, succumb beneath this abnormal activity, but the parietal cells survive and continue to secrete hydrochloric acid from the chlorides of the blood. If no tendency to heal exists, the corrosion steadily progresses until coats of the stomach are perforated. This ulcer, generally single, may often be multiple, but rarely large numbers are found. Yet Berthold mentions a case with thirty-four, and others have reported even larger numbers. The ordinary position is upon the posterior wall of the pyloric portion of the stomach near the lesser curvature, or in such locations as are easily affected by the gastric juice.

To detect the presence of the ulcer and the gastric outline, Obrastzow's method of examination of the stomach and intestines is excellent; it is as follows: The patient is placed upon his back with the knees drawn up and the elbows placed against the sides. The epigastric region is then lightly struck in order to determine the absence of any acoustic signs. The patient is then raised into a sitting posture and given one or two glasses of milk or water. Having been again placed in the recumbent position, the abdomen is percussed by striking it with the four fingertips of the right hand. The limits of the stomach, especially the lower boundary, are determined by noticing the point at which the splashing sound is no longer heard.

The position of the lower border of the stomach is the most important one, and this author devotes most of his attention to its consideration. He sums up the results of his observation on it as follows:

1. The lower border of the stomach, both in men and women, is usually to be found in the lower supra-umbilical third—i. e., the lower third of the xipho-umbilical line.

2. In the men of the middle class the border lies somewhat higher than in women of the same class.

3. In working women, apart from the influence of the disease causing displacement, it lies somewhat higher in women in affluent circumstances.

4. The influence of age is seen in the fact that in children under fifteen years the lower boundary of the stomach seldom reaches to the navel; while over the age of fifteen years the influence of age is inconsiderable.

5. Previous pregnancies produce a depression of the lower gastric border.

6. The influence of disease is as follows: All those in which there is depression of the diaphragm, as pleurisy, emphysema, pneumo-thorax, displace the lower border downward. So also do enlargements of the liver and spleen. The converse is true of those processes in the abdominal or pelvic cavity which press the diaphragm upward—e. g., pregnancy, distended bladder, tumors below the stomach, peritonitis, perityphlitis, intestinal obstruction, typhoid fever, etc. Diseases of the stomach, with the exception of gastrectasia and disease of the intestine not causing tympanites have no special influence on the position of the stomach.

7. The most marked influence on the position of the lower gastric boundary is exerted by the shape of the body and the general nutrition. Thus in men with excellent skeletal development and nutrition it lies in the middle supraumbilical third; in men with average development it reaches the junction of the middle and lower thirds, or extends into the upper part of the lower third; and in those slightly built and with poor general nutrition it usually reaches into the lower part of the lower supra-umbilical third and to the level of the naval. The same conditions hold good for women, except that in those not of the working class and of the average development the lower gastric border reaches, not into the upper part of the lower third, but into its lower part; and when the women are poorly developed, it lies usually at the umbilicus.

Ordinary ulcers often attain a large size, sometimes two inches in length, but larger ulcers than this have been reported. Should small ulcers coalesce, a ragged outline may be seen instead of the usual clean-cut appearance. The loss of substance is usually greater in the mucous membrane than in the submucosa, and in this layer than in the deeper tissues, making the form of the ulcer crater-like. The various layers of the gastric walls can often be distinguished in the ulcer by the varying extent to which they are eroded. The walls of the ulcer may be vertical, or, as Virchow says, one side may be vertical and the other terrace-like. The axis of the ulcer may not be perpendicular to the mucous surface, but may be obliquely directed like the gastric arteries. This favors the theory that gastric ulcer may be caused by embolism in local arteries, for example. Pannan and Cohnheim have demonstrated that emboli driven into the gastric arteries of the dog produced characteristic ulcers in the mucosa, while the funnel-like manner in which the coats of the stomach are successively destroyed would show that the ulcer corresponds to the area of an artery supplying the mucous membrane. The base of the ulcer is formed by one of the layers of the gastric parietes, unless perforation has occurred, in which case the base may be formed by the liver, the pancreas, or some other organ. Opposite the ulcer the serous coat usually shows a patch of fibrinous lymph, which forms the attachment to adjacent tissues in cases where adhesions occur; this frequently prevents the escape of the contents into the abdominal cavity, even where the entire gastric wall may have been pierced by the ulcer.

The tissues near recent ulcers contain granular detritus, consisting largely of remnants of connective tissue fibres, disintegrated red blood corpuscles and fatty granules, which often compresses the tubules and separates them from one another.

The walls of the blood vessels in the newly-developed connective tissue are thickened by endarteritis or atheroma. The new tissue may develop in the mucous membrane around the ulcer from some distance, and compress or obliterate the gastric tubules, and cause inflammation and atrophy of the nerve filaments. The evidences of hemorrhages may be seen in the eroded blood vessels. Serious hemorrhages occur generally from erosion of the pyloric, splenic, coronary, gastro-epiploic or gastro-duodenalis velsels; but a dangerous or fatal hemorrhage may occur from erosion of the hepatic, pancreatic and mesenteric vessels, or from varicose gastric veins. Should ulcers heal by becoming permanently united to an adjacent organ such as the liver or the pancreas, here the floor is covered by cicatricial tissue, and usually assumes a stellate shape, the contraction of which often produces deformities of the viscus or obstruction of the pylorus. If the former occurs the organ may be divided into two parts of unequal capacity; if the latter, dilation of the stomach results. The method of healing resembles that of a typhoid ulcer.

Talma has reviewed the various views which have been held regarding the mode of origin of ulcer of the stomach and of gastromalacia, showing that even yet little definite knowledge is possessed regarding it, and that the majority of writers consider that "gastromalacia" never occurs before death.

Talma undertook a series of interesting experiments upon animals with reference to this subject. The procedure followed consisted in the ligation of various parts of the intestinal tract; sometimes of the œsophagus and duodenum, sometimes of the duodenum alone or of some other part of the large or small intestine, sometimes in the separation of a loop of small intestine by a double ligation. Great swelling of the abdomen resulted in nearly every instance, due almost always to accumulation of fluid above the ligature. Gas was found in some cases, partly the result of the swallowing of air, partly due to fermentation. Investigations showed that these fluid contents of the intestinal tract consisted chiefly of the

gastric secretion. The amount of hydrochloric acid poured out after the ligation of the duodenum appeared to be abnormally great.

The nature of the fluid poured out by the intestine, and the character of the lesions seen both above and below the point of ligation seemed to depend largely upon the character of the gastric and intestinal contents at the time the experiment was made. Whatever the correct explanation may be, it is certain that very grave alternations often develop in the portion of the intestine below the ligature. The results of closure of the large intestines were somewhat different from those just described. The animals lived longer, the distention of the abdomen was not so marked, and the fluid had accumulated in the large intestine, leaving the small intestine and stomach entirely empty. The marked power of the large intestine to absorb water was doubtless the reason that no more fluid was present. Fæcal changes take place in the substances blocked up in either the large or small intestine, but not in a loop of the bowel which has been cut off by a double ligature.

The change is either due to ferments introduced with the food, or that it can take place only in ingesta which have undergone a certain degree of alteration. The production of the fæcal character took place first in the portion of the contents nearest to the ligature. The curative influence of vomiting was seen in the fact that rabbits which do not vomit, died quickly through overfilling of the stomach, while dogs lived several days, because they do vomit. The practical deduction from this is that patients with ileus who vomit with not too great labor, should frequently have administered to them large amounts of warm water, combined with the employment of other uninjurious means of inducing vomiting. In nearly all the rabbits experimented on there was a profuse secretion of mucus to protect the delicate glandular tissue. Death appeared to be nearly always due to the absorption of material from intestinal poisoning. Talma claims that gastromalacia develops under two circumstances: 1. The presence of chemically altered gastric contents; 2. A high tension of the stomach wall. As a result of the latter there are produced in the gastric wall, especially in the mucosa, widespread hæmorrhagic infiltrations, necrosis, etc. Gastric contents, containing even a very small amount of hydrochloric acid, produce changes in the soft parts. The stronger the chemical action of the secretion the more rapidly do infiltration and necrosis and also the softening follow. Gastromalacia, as seen in rabbits experimented on, occurs principally in the fundus, since the resistance of the muscular wall to the pressure is least here, and the circulation is most interfered with; the interference with the circulation is the chief cause of hæmorrhages, etc. The great stretching of the wall of the fundus, and probably of the blood vessels contained in it, is the reason that the gastromalacia is found only in this region.

The malacia is "white" when it develops without previous hæmorrhage. In addition to the malacia, ulcers in various stages of development are found. These are due to extreme restriction of the circulation. Through this restriction there can either arise: 1. Large hæmorrhages under the mucosa, separating it from the muscular layer and causing its death; or, 2. Hæmorrhages into the mucosa, likewise producing its necrosis. As a result of softening of the necrotic parts under the influence of the gastric secretion, larger or smaller ulcers are produced. Often, however, ulcers arise without previous hæmorrhage and these are to be regarded as the result of softening. Talma comes to the conclusion that the brown gastromalacia arises in man usually, if not always, during life, though death may so rapidly follow that there is no time for the development of secondary inflammations. Autopsies show that malacia in man is situated nearly invariably in the fundus. With regard to the production of gastric ulcer in man, Talma reports several cases in which painful tonic spasmodic contraction of the stomach wall was almost certainly the cause of ulceration and hæmorrhage; and he further refers to the frequency with which spasm of the stomach is witnessed in hysterical women, diseases of the central nervous system, and hypersecretion of the gastric juice. Experiments were then made on animals to determine the cause and nature of this gastric spasm; and these appear to prove that irritation of the left vagus developed a powerful contraction of the stomach, which, if long continued, would produce round ulcer of the stomach, penetrating the mucosa, and sometimes the muscular layer. The contraction of the wall of the stomach in the ploric region was soon followed by necrosis of the mucosa, and this by the development of an ulcer. The pressure upon the blood vessels, and especially upon the arteries, must come into play here, for, if the movement of the blood in the veins were disturbed more than that in the arteries, hæmorrhages would be found in various portions. The occurrence of hæmorrhages shows, however, that the veins do not entirely escape the pressure of the muscular layer.

When hypersecretion of hydrochloric acid and gastric spasm occur together the conditions are those most fitting for the production of the ulcer. An excess of hydrochloric acid is often the cause of gastric spasm; but that it is not always the cause is shown by the fact that the administration of large amounts of fluid with carbonate of soda does not always prevent the attacks, and sometimes even seems to increase them. Nor does he claim that every case of ulcer is due to gastric spasm, though very many instances can be explained in no other way. That the ulcers occur almost always in the pyloric region is due to the fact that the muscular contraction is strongest here. When the contraction of the walls of the fundus is unusually strong, ulcers may occur there also. The condition of the ulcers after once formed is still an undecided question. It has generally been claimed that they showed no tendency to heal, and that they may last for even twenty years or more. The author is, however, inclined to the view that the instances of vomiting of blood after long intervals of freedom from it are simply instances of the formation of new ulcers under the influences of the old causes, the old ulcers having healed. The functions of the stomach

cannot continue normal between the attacks, if the ulcer be still existing.

The cicatrices contractions, and distortions following ulcers are sources of great annoyance later. While perforation may occur, yet the liability of this accident diminishes with age, occurs more frequently in the female than in the male, and between the ages of twenty and thirty. In a sudden perforation with the ulcer on the anterior wall, the stomach contents may escape into the peritoneal cavity, producing a rapidly fatal peritonitis. If the perforation takes place slowly, the fibrinous exudate in front of the ulcer, which has already been mentioned, cause adhesions with neighboring tissues, and a new floor for the ulcer is formed. The ulcer sometimes opens into the pleura, the mediastinum, the pericardium, the lung, the left bronchus, the gallbladder, or the large or small intestine. Often the ulcer seems to be latent throughout the entire course, at least attention is not drawn to any characteristic symptoms during life, and the cicatrix seen at the post-mortem is the only evidence that the stomach has been affected by this lesion. Generally, however, pain, vomiting and hemorrhage are the "triplet signs" of ulcer, varying in their relative importance. The symptoms first manifested in an ordinary case of ulcer may be so indefinite as to be mistaken for some simple digestive disturbance.

Vague sensations of fulness, tension, or pressure, transient dull or drawing pains, and fitful or variable appetite are experienced. In ulcer, however, the tongue is clean, or at any rate usually only slightly coated at the base. The curtailed diet is not always due to diminished appetite, but frequently is a precaution against pain which has been observed to be more marked after a full meal. This restriction of diet soon causes emaciation, as in our patient, anæmia, and consequent loss of strength, together with functional disturbances of digestion. The epigastric pain is cramp-like, and gradually becomes localized to a definite spot corresponding to the seat of the ulcer. This spot is usually in the lower half of the stomach. It must be understood that the pain is localized with exactness, but it is generally referred, as in this case, to the infrasternal depression. Tenderness over the epigastrium is common, especially when subjected to pressure, hence tight lacing and tight trouser bands cannot be borne. The pain which is characteristic of ulcer is circumscribed, boring or gnawing, epigastric or dorsal, or both, appearing soon after taking food, and disappearing when the food has been removed by vomiting or passing into the duodenum.

The irritation is produced also by the presence of gases and acids, the result of digestion and fermentation. Stimulating articles of food cause greater pain, bland food less. That fermentation and other acids often cause pain is shown by the relief which the administration of alkalies will sometimes afford. Vomiting usually appears soon after meals. It may occur several times a day, or only once or twice a week. Soon after a meal the egesta consists mainly of particles of food with little or no digestive change. It may be mixed with blood and mucus. At other times there may be a mixture of fermentation fungi, bacteria, sarcinæ, remnants of food, mucus, blood, bile, etc. The emesis is generally preceded by pain, and is followed by relief or alleviation of the discomfort.

Vomiting due to gastritis occurs without premonitory discomfort and does not depend entirely upon taking food, often persisting after cicatrization. Hemorrhage or hæmatemesis occurs in twenty-five per cent. or more of all cases. Many hemorrhages are so slight that vomiting is not caused, and if the blood is digested no change is seen in the color of the stools. Large hemorrhages which are not followed by emesis cause blood-stained, pigmented, or tarry alvine evacuations. If hæmatemesis occurs after a moderate gastrorrhagia, the blood is generally acid, coagulated and has a tarry or coffee-ground appearance, due to the action of the gastric juice upon the red corpuscles and proteids of the blood. If the hemorrhage is very profuse, the gastric juice may not affect the blood, the reaction may be alkaline, and the color arterial. The quantity of blood may vary from a mere trace to several pints. Fatal collapse occurs because of profuse hemorrhage in about four per cent. of all cases. After hæmatemesis, malæna may persist for several days; there may appear also waxy pallor of skin, small rapid pulse, mild febrile movements, anorexia, ringing in the ears, vertigo, mild delirium and loss of consciousness.

Patients usually rally rather rapidly after hæmatemesis; the mental effect may retard recovery, for there is often fear of a return of the hemorrhage. Another may occur in a few hours, in weeks or months, sometimes not for years after, and at a time when the patient least expects it. Not infrequently there is a premonition of the threatening hemorrhage, in the form of flashes of heat, epigastric pulsation, fulness in the stomach, and great restlessness. It sometimes happens that the first indication of gastric ulcer is an alarming hæmatemesis, resulting from the erosion of a large vessel. Perforation is a most alarming complication of ulcer, when it occurs. It takes place into the peritoneal cavity in six or seven per cent. of all cases, and is then usually rapidly fatal, either from shock or acute peritonitis. If the perforation is small a localized peritonitis may occur, followed by adhesions to and abscesses in neighboring organs and tissues, the fatal termination being delayed. The accumulation of pus in these organs and cavities may produce inflammation, and usually causes death by exhaustion. If the perforation occurs into the colon or intestines, fæcal matter may be vomited, or lienteric diarrhœa may result. Where fortunately adhesions take place with adjacent organs or tissues, death is prevented, at least for a time. Here the patient experiences various symptoms of dyspepsia, and may suffer from localized pains or sensations of distress. Generally the perforation occurs suddenly and without warning, following a fit of coughing, a blow on the stomach, lifting, straining at stool, leaning over a table, riding, or eating a hearty meal. Suddenly severe pain is felt in the abdomen, and collapse may result. Distention of the abdomen, severe pain on the slightest touch,

vomiting, hiccough, small rapid pulse and pinched features are all forerunners of the fatal issue. Perfect recovery after perforation is exceedingly rare, and healing after ulcer is by cicatrization, but these modifications of structure and shape cause dyspeptic symptoms, reminding one of nervous or functional dyspepsia, cancer, or gastritis. Cancer may develop in such cicatrices, and gastritis is not a rare complication.

When the existence of a gastric ulcer is suspected, there should be no delay in starving vigorous treatment. The indications are several; first of all the stomach should be given as near absolute rest as possible for a long time is necessary for the purpose of promoting more or less entire stoppage of its functions, both sensory and motor. If we make only small demand in this organ and thus reduce the irritation caused by food increasing the muscular and granular activity, and at the same time we can maintain the bodily nourishment, we have more reasonable chances for success.

Not only this is true, but the cicatrization is favored by neutralizing the acids of the stomach by antacids and the use of such drugs as soothe the ulcerations. Many authorities are now advocating the use of the stomach tube, unless a tendency to hemorrhage is apparent. By its use it is possible to apply remedies impossible of application in other ways. The use of the tube, however, by those who are unskilled is dangerous.

D. D. Stewart has been active in this branch of treatment and his views in light of his success are of weight. He advises the practitioner to acquaint his patient at once with the character of his condition and advise him cautiously of its dangers.

The patient in this newer line of treatment should stay in bed from ten days to five weeks depending upon the bowel feeding after which he should continually use a sofa for a portion of the day and then gradually move about his bedroom as improvement is noted. This requires the attendance of a nurse skilled in this line of work. For a time varying from seven days to three weeks the patient should be exclusively fed by the bowel. Experience has taught that about two weeks is the average duration. Now comes the golden rule of this treatment. All food which includes even milk is to be prohibited during this period by the mouth. Even drink at the outset is to be abstained from excepting the fluid in which to give the medicines. Fluids excite the functions of the stomach as well as solids in proportion. It is better to alleviate thirst by using particles of ice or the use of injections of water after the cleansing enemas.

The technique of bowel feeding, including the forms of enemas, which are recommended by Stewart, is as follows: At the outset of treatment, unless the patient has been for at least five days on an exclusive soft diet, and unless severe or recurrent gastric hemorrhage or obstinate vomiting contra-indicates, a laxative (preferably two grains of calomel) is given on the empty stomach, and light food, such as peptonized milk-gruel only, is to be permitted by the mouth until the bowels have freely acted and again become quiet. The action of the calomel may be hastened at the end of six hours by a large warm water enema, or by a small dose of salts. Naturally, if the bowels have been very freely moved without the laxative, it is unessential. Contra-indication for the employment of a purge existing—hemorrhage or vomiting—a large warm water cleansing enema may be used instead. If marked gastric irritability is present or hemorrhages have lately occurred, no delay should be permitted before instituting bowel feeding.

The feeding is to be given at intervals of approximately eight hours, as at 7 a. m., 3 and 11 p. m. These hours are the most convenient for all purposes, but may require alteration to suit particular cases. The afternoon hour for feeding may commonly remain a fixed one; the morning or evening hour alone often requires some variations. Thus, if the patient is sleeping at seven in the morning, the feeding hour may be postponed until she awakes, and the evening time for the administration of the enema may be an hour earlier, if the patient cannot rest well by day, in order that the sleep lost by the time consumed in the manipulations of bowel feeding may be thus partly regained. Five to seven hours' retention of the enema are about all that may be expected. One hour before each feeding, or at least before the alternative feeding, the sigmoid flexure is to be irrigated with a pint or more of warm water, plain, or with warm water containing a small teaspoonful of salt. This the patient is encouraged to avoid after a few minutes. Immediately after its rejection, if thirst is usual, eight ounces of normal salt solution is passed into the sigmoid flexure. This may be permanently retained, or after fifteen minutes avoided. Now at the end of one-half to three-quarters of an hour rest of the bowel, the nutritive enema is introduced. The patient is placed on the left side with the knees flexed, the pelvis being elevated by aid of a pillow. The enema is administered either by a fountain syringe or preferably a glass funnel connected through a stretch of rubber tubing about five feet in length. To the terminal end of the tubing is attached, by means of an interposed glass tube, a moderately firm rubber rectal tube. This tube should have a closed end and a large velvet-edged, lateral eye. After warming and oiling, it is carefully inserted as high into the bowel as possible; it should at least reach the promontory of the sacrum, in order that the enema will flow readily into the sigmoid flexure, and little of it escape downward into the rectum. If the tube can be gently passed to the extent of twelve or even eighteen inches, it renders the operation much more likely to be successful.

The following enema, and its modifications, Stewart has found so successful that he rarely if ever has occasion to employ others, or many modifications of it. A heaping teaspoonful of somatose, or of one of the newer preparations of concentrated albumen such as nutrose, plasmon, or the like, is dissolved in as little water as possible. One large or two small eggs

are now thoroughly whipped with this and then incorporated with either four ounces of peptonized milk-gruel or with two heaping tablespoonfuls of Mellin's food which is first prepared in the usual manner. The Mellin's food or the gruel should not be added to the whipped egg while too hot lest partial coagulation of the albumen in the latter occur. Bovinine can be used instead, or four ounces of moderately thick unpeptonized gruel made with fine flour or barley, wheat, or oatmeal may be employed. This must be carefully prepared in order that no particles of adherent cooked gruel or uncooked flour exist. Even with care in preceding preparation, the gruel had better be run through a hair sieve after making. The whole enema, when of this composition, should not exceed eight ounces, and preferably should be of less amount. After preparing the enema, five grains of an active preparation of papain is added, dissolved in the gruel or in the Mellin's food. If unpeptonized gruel is employed four grains of taka-diastase, or an equal amount of the solution of taka-diastase, is added as well. Peptonization of the egg and conversion of the undextrined starch proceed rapidly in the bowel, under the aid of these digestants, and absorption of the nutrient enema is prompt. To the enema, in place of the somatose, or in addition to the latter, one to two teaspoonfuls of Mosquera's beef jelly may also be added. If the beef jelly is used it is well to see that it is first thoroughly incorporated in the gruel while the latter is still hot. Mosquera's jelly is perhaps the most valuable preparation of predigested fluid beef on the market, but it is not actually essential to employ it in this connection unless the patient be much reduced in strength. It should not be used in the feeding of the first two or three days, in order to determine as to the agreement of the simple enema.

Cornils in a gastric ulcer in his own person, concludes that in many instances no drugs are needed, except purgatives to produce a daily evacuation, and that reliance is to be placed on dietetic treatment alone. With a diet which produces but little fecal matter, as with an exclusive milk diet, the daily opening of the bowels is not so necessary, but with a mixed diet this is imperative, in order to relieve thereby any congestion of the vessels of the stomach. For this purpose he took himself, and gave to others, Hunyadi-Janos water, and never with any unpleasant effects. The diet should be unirritating but not every stomach will stand for any length of time a too-restricted diet, and some stomachs, even with ulcer, seem to bear better those foods considered less digestible than those classed as easy of digestion. Often the instinct of the patient is a better guide than the most rational theory. Rest is a very important factor of the treatment, the degree of it depending on the severity of the symptoms. It is also important to limit the number of meals and the quantity of food ingested, in order that the stomach may be empty and at rest after the period of digestion should be over. The loss of weight caused in this way will be soon made up when recovery commences, and at this time the administration of additional light meals may be begun.

THE PHYSIOLOGY OF PAIN.

PART II.

BY HERMANN GASSER, M. D., PLATTEVILLE, WIS.

THE only distinction between disease of the mind or insanity, and the diseases in our body, is one of difference of physical location. Every disease is a disease of the mind or feeling. A felon in the finger, an inflamed appendix, or a typhoid fever, is a disease of the feeling or mind, but as it is mostly a small part of the whole, although extreme it is a local diseased feeling in the whole of feeling, and the more the local disturbance influences the whole of function, the greater is the diseased state of feeling or mind. When the brain becomes generally diseased, into which all our bodily functions are carried for adjustment in unity of relation, it becomes a general disease of mind or feeling. It is only a differential of pathology and diagnosis expressed by the same system of feeling with all its variations of relations.

This world pain is not in the brain, neither is it in the world that to him is painful; it is in the general equilibrium of the world's related unity that has passed through the brain with its changed function. We have always connected function with feeling. Indeed, we cannot prevent this, for it is true. The pain in my bruised finger is a fact, to deny which would at once cause the other fellow to look for the crack in the brain. This, however, is not the end of all of the truth in the problem, although all our truth so far ends in this experimental fact. The facts of experience have demonstrated the greater truth with scientific and unerring system, that the local lesion with its changed function must first be transmitted by the nerves to the brain before it can be a painful feeling as an extreme and unusual relation or disturbance in the general equilibrium. If the local lesion was pain and feeling then life would not be a unity of related function, the measure of which is feeling. We feel the pain locally because it is the force adjusted centrally in the equilibrium, that is the measure of its relation in feeling instantly carried back with system, that the system of which it is a part may bring all its forces to adjust and repair it. If the lesion was pain all the functions of the body would not at once come to its aid with system. The lesion is painful because it is the measure of the equilibrium or unity of life that is feeling.

Life is not our bodily system of function; life is more than this; it is the unity or equilibrium of feeling, the ever-present measure of relation of the system of our bodily functions. Our organized system of bodily functions is only physical work, is not life, feeling or idea; life is the measure of our bodily functions in the equilibrium of feeling. This is why the unity of life with its equilibrium of feeling at once brings all the forces of the general system into play when a local lesion takes place.

It is here man flounders and becomes wrecked. Life is an equilibrium of feeling in the equilibrium of the world, that is the unit of feeling. It is by our feelings we adjust the system of our bodily work with system and relation to the world's work, and

thus make it ever more enduring and constructive, because our feeling and idea is creative. The world is a system of creative work in unity and equilibrium; the equilibrium of the world in unity is the world idea of creation, of which the system of the world's work is its measure.

If the ever-present world was not a unity or equilibrium of feeling with relation, the terms of which we know in our equilibrium of feeling with all its variations of relations, then the world would not be an equilibrium of creative work, and we would not be a work of its creation as an equilibrium for non-existent, it would only be a blind equilibrium of force. An equilibrium of creative system must have a measure of its relation, and this universal experience demonstrates is feeling. This is the unit of psychics as surely as the unit of force is physics. But there are no more units of psychics than there are units of physics. The world is psychics with its system of physics or work, the beginning and end of all our philosophy. Units of force and atoms have no reality and being in the world's system of economy. They are scientific and cultured bugbears to confound others and draw the wool over self to grope in darkness, with the light shining from all points of the horizon to demonstrate the mistake.

This local idea of painful feeling is so firmly established that some even believe they have found special nerves of pain. In the light of physics, biology and psychology, nerves of pain can have no possible existence, for the idea violates every principle of general experience. Indeed, we say these are sensory or ingoing nerves that carry sensations centrally, and these are motor or outgoing nerves that carry volitions, or will, that are the answer or adjustment of functional feeling. The truth is, what we call the sensory side of the nervous system has no more feeling or sensation, per se, than a stone; they only carry nervous energy centrally. This is equally as true of motor nerves. The entire nervous system and brain is only a highly organized system of physical work, and no part, or the whole, is feeling or sensation. It is the instrument that reacts upon all our bodily functions, and the world without with system carries them centrally, wherein they become adjusted into the unity or equilibrium of relation, that is the system of the world. We live the unity of the world because we are an equilibrium of the world created out of the world equilibrium as related parts of the same system. The consensus of all our bodily functions is the unit or equilibrium of feeling that is the only life or world we know.

Our life being an equilibrium, and the unity of its relation the unit of feeling, the variations of which is the measure of the system of the world equilibrium, the world must be the unit of life and feeling. This very special department of scientific study analytically traced to a legitimate conclusion along the road of experience, with the system of truth the guide, demonstrates. The thought that the world is a unity, an equilibrium of creative work that is the legitimate product of physical science, is, indeed, a wonderful and transcendant truth that answers all the questions of the world problem, is the limit into which all things enter without an exit.

There is, however, an exit, the door of which is so overshadowing and universal, that its simplicity of largeness and greatness was not discussed by science. Having mathematically and physically accounted for all the forces of our architecture of life into an equilibrium that is the system of the world, interdependent and related parts of the same, with the unit of force the beginning and end of all; our science has become complete in system, closed all the doors. The world problem has been resolved into a scientific physical system of demonstrable philosophy. Where is the door of exit from this inexorable system of the world truth? It is the universal, open and simple door that overshadows all things else: What is the truth of this scientific system of the world's work that is the system of truth?

Without going into elaborate details, man is a unity, an equilibrium, created by the system of the world into the world truth, and his truth of the world is a demonstration of the world's system. Man's truth of the world is an equilibrium created out of the world's system of force or work that is his measure of the world equilibrium with its system of work. Man's equilibrium of the world is an interdependent and related part of the world equilibrium that is the ever-present reality or unity of its being wherein the system of its work is the measure of their relation. Man's idea of the world is the system of the world's work, and the system of the world's work is the world idea. The world is an ever-present unity or equilibrium of creative work, man is a world unit in the unity of the world that the system of the world's work weaves into the communion as one. Man has found his parentage. He is a legitimate and natural son of the father, an heir to all his estates. He has been capitalized with the resources of the world's system of creative work into a world banker with unlimited possibilities to bank upon the world's bank with system, honest exchange and good work, in the clearing house of which you will become a member of the firm.

This is man's play in the game of the world. The stakes are high. As an actor upon this immortal stage will you play your part to continue its production, so full of promise, faith and hope of increasing splendor, wonder and beauty that is without limit, without end, as a related and immortal part of this universal production and win the world? Or will you play a personal, worldly and selfish game as a banker, the resources and capital of which you have become an heir, and play a confidence game upon the world of confidence that is sure to end in bankrutpcy? The more you win self, the more you lose the world. The greater your worldly success, the more you become a world bankrupt.

There is only one road in the world's infinite and immortal system that is worth the candle; it is the world's system of creative and universal economy and truth, the guide posts and signs of which on all

hands point their fingers to the immortal destiny, and not to follow the direction is your own fault, for which you will surely suffer, as all others lead into the wilderness and darkness that bring misery and pain, and ends in the blackness and rayless chasm of immortal night, wherein the goddess of faith has long since been clipped of her wings, the God of hope tortured into ashes, the inspiration of the immortal truth with all its incentives, wonders and beauty without end only a mockery to hate for no longer possible of redemption, is only a light of the world to remind man of the depths into which he has fallen that is worse than a failure, the sooner it sinks into the sea of oblivion to be forever lost, the quicker will he be released from the torture, for it is only a blot in world's good. Lost to all truth and courting annihilation with all possible speed, there is still a smouldering spark as a remembrance of his once having been in purity and worth, and although we will have to ascend the winding steps, flight after flight, with patience before we will find the glowing ember that is still a reminiscence, a live coal to remind us he is not wholly lost. The world's light never goes out, although it may be so neglected that it is only a glowing ember ,and to rekindle and revive the world's fire of truth takes time. Nature, however, is a kind mother; if you will only display the incentives, she will nurse and provide all your wants. Indeed, so good is she that the greatest wonder in the world is why we have become estranged from her hospitable economy with everything to gain. All sin, want, poverty and crime is an expression of the world's ignorant destructive economy, the penalty because we have not lived the system of the world's economy.

Man does not live in his body, but through his body. Man lives the world; the world lives in man. Man's life and world is the immortal life of the world, but his life and world is a mortal part of the immortal life. Man plays upon the stage for an hour, lives all the ages, feels the universal throb of the world's truth. He plays his part well, but it is still so crude and incomplete in this play of the world that he falls back and out of the ranks, not to become lost in death; death has no place or recognition in the world's economy, for it is the universal life of creation in which death is a stranger. What man calls death is the world's system of being called back to rehearse and review his mortal play that it may become established to produce the immortal production of the world life with greater system and skill in his mortal life. Time in this play is no factor. If man lives the world's immortal system and truth he lives forever, is without beginning, without end. Man's physical body may come and go like a passing cloud, an ever-changing scene, endless transition, but he still continues to play a part in this transcendant, wonderful and fascinating game of the world.

Every impulse, ideal feeling, noble thought, good work that inspires worth, guides us on, stimulates our efforts in the immortal chase, allured on and on by this beautiful goddess of the system of truth with the purest of motives that is the measure of our faith, the mother of hope and life that leads toward the universal truth has been lived over and over again and again by our ancestors until it becomes resolved back into the general stream of life, that through our posterity will grow in intensity and volume as it flows with its system of truth onward to the ocean of *the truth,* the world, the world equilibrium, the ever-present unity of which is the world soul, world spirit, world idea. It is the world of science, religion and philosophy not only as brothers, but triplets, born out of the womb of the world truth with its system of creative work.

Upon these heights let us stop for a moment, turn our faces into the light of the world's system of truth as a general expression of thanksgiving that is a respite and rest, scan the horizon that we may observe our work and relation, recruit our energies, and again gird up our loins, buckle on our knapsacks, for this is not the end of our journey, it is the beginning. While we have learned the truth of the world's system of creative work, in every quarter of the horizon we observe still greater heights, the summits of which mount higher and higher until the peaks become lost in the clouds of nebulous mist, to remind us there is no limit to our work, for there is no limit to the system of the world's work. To look back with folded hands, take a bird's-eye view of the problem we have earned by patient, long enduring and continued work, is to clothe ourselves with the world's festive garments for the time, is a world's day of rest. But a too prolonged stay would be evidence of laziness, weakness and old age, for the garland and flush of youth is ever fresh upon its brow, the purest and sweetest prayer of which is work, work, work.

Man's world is growing fast.. It is not long since fear was God; powerful forces the instruments of his wrath. It is only lately that God is love, good, universal truth.. The former is typical of hell, from which it has been redeemed and translated into a heaven, the reality of which transcends its ideal hopes. Man is losing hell fast; winning heaven with great speed. But the world of truth is large. Man has gone down into its microscopic depths, reached out into its infinite space with a speed greater than the wind, but he is still upon the horizon. From the simple cell through the molecule to the atom, as well as from the earth to the sun and out into the realm of the stars, he is still upon the borderland of its system. The atom may become reduced until it appears as a world; we may mount star after star with system into the infinity until our present universe is only an oasis in comparison, yet will only be upon its shores, for it is the world truth with its system. As the world truth has no beginning or end, neither can its system. It, however, is a great accomplishment of man to learn that the system of the world's work is the measure of the truth, the world idea with its unlimited system of creative work.

The world science is truth with its system of physical expression; man's science is the physical system in truth, but does not know the truth, and is

why science to-day is making so many unpardonable mistakes. It knows only half the equation; weaves physics into psychics, but does not know the cloth of its own spinning, is mostly thrown into the waste basket, that is an extravagant and unscientific economy. When, however, man once learns the science of truth, idea or psychics, and unlearns that the physical system of work is the truth, he will make an incomparable stride in advance, for a new, a real, a world science, founded upon the law of universal truth, will come upon the stage.

The system of physical science that has been reared into the wonderful temple we know, live and work in to-day will not be less, because it is a system of truth, although a little halt and lame because it had to guide its older but blind brother of the truth; it will be more when the bandage is removed from its eyes.

To perform the operation of removing this bandage successfully we must first make a clear diagnosis of the case, for we have the world for our patient, and universal truth the measure and standard of our responsibility; if our diagnosis is wrong, the operation will be a world failure.

Modern physical science brings its loved, blind and older brother Psychics in an invalid chair that is carried with even and measured step by the scientific brotherhood of astronomy, geology, anatomy, physiology, heredity, neurology and psychology, each of which is the light of the system of truth; for a diagnosis and operation if possible that the light of truth may be restored to him.

After a careful and prolonged study of this case we find that all his physical and physiological organs are normal and performing their functions with perfection. In the effort to find his blindness, we learn his is the light of universal truth. An inquiry into his family history, we find this older brother fully recognized that all the other members of the family suffered either from physical astigmatism, intellectual strabismus, the cataract of modern sciences, or ocular nerve paralysis that made them wholly blind to the truth. Instead of blind Psychics being the patient, he is a sympathetic and tolerant guardian to protect, inhibit and guide them from falling into greater mistakes, the result of their weaknesses and deformities. He is guiding them with such a gentle and loving hand that they believe they are carrying his burden. What a wonderful purity of family devotion in all its beautiful simplicity; it is the world truth and good personified.

With this diagnosis, instead of preparing to perform an operation on this older brother Psychics, we must open up a world hospital, appoint him surgeon-in-chief, give him general control of all its management, for he is the only one competent to direct the details, wherein "science" with all its special departments and variations must receive special treatment each after its own art. To unfold and explain the special cases in detail is the record and history of the world, is the bibliography of reference to direct your attention for further research, a brief synopsis of its general principles and outlines we have given in "The Circulation of Nervous Energy in the Nervous System."

Every effort and purpose of this paper has but one motive; to portray an idea, cast a general law, unfold a universal system, wherein every special fact, personal experience, example by analogy, is only utilized to illustrate the idea or problem intended to convey as a means for the end. Facts are but atoms in the truth, and if here and there one should go a little astray, it does no real damage to the general principles; is only a slight skirmish or bushwhackery on the frontier, unworthy of attention, to quarrel over by privates in the rear ranks. It is true, however, that a special system of facts may be a fateful and strategic point in the battle field of the world truth, but it is never on the outskirts, always and invariably surrounded by the contending armies of the world in continuous conflict. For six years, with article after article, I have announced that I have won such a position, supported by the world's army of experience by which it alone was possible and really deserves all the credit, so far, without a contending foe to dispute the situation. Am I a conceited generalissimo who has won his title and spurs by slaying cabbage heads right and left of his own creation and hence an innocent and deluded but harmless creature only to amuse others by my credulity, much less worthy of notice; or have I won a commanding position in the battle field of truth that challenges attention?

Ideas rule the world because the world is an idea. This is the fort I hold and maintain against all contending forces, more than willing to be mercilessly punctured, metaphorically shot to pieces, dragged out a deformed nightmare. It is of ready access, exposed in every quarter. There is no patent on it; no heavy stone walls dove-tailed by links of lead to batter down; no sixteen-inch Harveyized steel plates to overcome. If, however, it is a true idea, it is more than a thousand times easier to tear down these walls, break through the armor plates, than to destroy and annihilate it. If it is not true, a simple child, a single man can, by pulling with the faintest thread of truth, cause the structure to fall in and crumble into black ashes.

What is still more wonderful, each man can win this battle of truth, become a commander-in-chief of a world victory; privates, captains and generals upon these plains no longer have an existence, for each is a truth of the world in the world's truth, can win the world after his own art and skill, for all the roads of patient good work from the man who toils upon the streets, works in the factory, president of a bank, professor in a university, to the preacher in the pulpit, lead with unerring footsteps to the same victory. The routes may be different, but they all lead to the same immortal destiny. The man on the street may win the world by good work, while the prince of commercial success who expends all his energies to win a special distinction, renown and worldliness with its luxury of sensual gratification that endures for an hour, may lose the world.

APPENDICITIS COMPLICATING PREGNANCY, WITH REPORT OF CASES.

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I WISH to preface my brief remarks, by stating that one of the main objects of this paper is to invite discussion, that the consensus of opinion and experience may be a help and a guide to us all, in these cases where prompt decision and action is a frequent necessity, and I have no doubt most of the surgeons present, have often given this subject serious thought and study.

Up to within a few years, every inflammation on the right side of the female pelvis was invariably looked upon as being due to disease of the uterine adnexa.

In 1894 Prof. Munde was one of the first to publish a case of pregnancy with appendicitis, which was successfully operated upon by himself.

In 1896 Dr. Abraham, of New York, reported 17 cases, in 12 of which the diagnosis was verified by the operation. Seven of these cases died.

The difficulties of a differential diagnosis are often considerable, when the right parametrium is involved presenting a sensitive mass close to the uterus.

A long appendix lying in close relation with the uterine appendages is not infrequent.

The appendix after frequent attacks, often becomes adherent to adjoining structures; on two occasions the appendix was found glued to the right ovary.

In such instances conditions are produced that the examining finger cannot differentiate from those brought about by suppurative processes that have their original seat in the tube or ovary; or an appendicular abscess may have burrowed down to the vicinity of the uterus from above; or finally, an appendicular infection may have directly communicated itself, by contact to the uterine appendages, as shown in an autopsy where a ruptured pyosalpinx communicated with a gangrenous appendix.

But even in these complex cases a careful observation will often elicit the true state of affairs. The history of previous attacks will give a hint one way or other.

Talking with Dr. Dehner, of the Wurzburg Hospital, Bavaria, I learned it is his practice in these cases, to depend almost exclusively upon rectal palpation for a decisive diagnosis. However, as the size of uterus increases, crowding aside the other viscera, a diagnosis is impossible outside of an exploratory incision.

The prognosis in appendicitis occurring during pregnancy depends upon the extent of the inflammation, the stage of pregnancy, and the time and technique taken to combat it.

In most cases a carefully prescribed remedy would probably be the proper treatment to pursue, were we always able, with authority, to identify the mild cases.

Here lies the great difficulty. The mortality among the bad cases is very high, as shown by Dr. Abrahams' report that seven out of the 12 cases died of septic peritonitis.

The history of all these cases show that operation was performed late.

Dr. Gerster says that "operation for the earlier stages of appendicitis presents no great risk in early or late pregnancy. Indeed, the safety of both mother and child will be insured by nothing better than radical means directed toward the removal of present, or future danger lurking in a diseased appendix."

An important point to be considered, is the method of treating the abdominal wound. If the abdomen is securely closed by suture, parturition may be completed without hindrance to its progress or danger to the abdominal suture.

On the other hand, when it is necessary to drain the peritoneal cavity, the situation is a serious one. When labor sets in, existing adhesions may be ruptured and general infection of the peritoneum occur. This is not all. The viscera may tend to escape from the abdominal cavity during expulsive efforts.

Having all these difficulties staring one in the face it was hard to decide what course was best to pursue in the following cases. However, the high pulse, vomiting, the characteristic local pain, spontaneous and on pressure, with the well-known facial expression made us decide that something radical had to be done at once.

Out of the four cases recorded but two will be cited.

Patient, age 23 years, gave a history of frequent attacks of appendicitis before her pregnancy. Within the past two days the old symptoms, pointing to an appendicitis, had recurred more intense than heretofore. Upon examination the abdomen was found occupied by a uterus which seemed to be about the seventh month of pregnancy; palpation was unsatisfactory. The right rectus was rigid, and on pressure an acute lancinating pain was experienced in the region of McBurney's point. Pulse, 138; temperature, 100 1-2.

The rapidly rising pulse, the vomiting and characteristic facial expression decided an immediate operation.

An incision was made along the outer side of the right rectus muscle, the peritoneum being excised exposed the pregnant uterus which was pushed aside. The appendix was found deep in the iliac fossa. It was much congested and distended with a fluid resembling weak coffee. Near its base was a marked stricture.

Its mucosa presented necrotic spots. The appendix was removed and the ligated stump cauterized. The abdominal wound was united with greatest care. Close rows of sutures were used. Each layer of the abdominal wall being sutured separately. An aseptic dressing was applied and supported by adhesive straps with a carefully adjusted abdominal binder. The patient made an uneventful recovery and was finally delivered of a healthy infant.

After delivery the abdominal wound was examined and found in good order.

The following case is one where remedies bridged the patient over former attacks, yet she was never free from pain during, or after her pregnancy.

Mrs. P., aged 22 years, primipara, was admitted to the hospital for the purpose of being confined. Upon taking her history it was found that before and during pregnancy she suffered considerably from cramps in the abdomen. The attacks followed indiscretion in diet. At the height of the paroxysm she was much nauseated and vomited a dark greenish fluid. Remedies relieved the attack and gradual improvement followed.

Since her first severe spell of colic she says she has been troubled with more or less soreness in the abdomen, especially on the right sid.

During her pregnancy, the attacks had become more frequent and the pain more excruciating. At times a miscarriage was feared. After careful consideration it was deemed wise to pursue a waiting policy.

Under close observation, medication and selected diet, the patient went on to full term and was successfully delivered of a healthy child.

About four weeks after leaving the hospital, the child then being seven weeks old, the patient was suddenly seized with severe abdominal pain. She vomited excessively and says she broke out in a cold perspiration.

After taking home some remedy, the pain subsided and she fell into a doze. Being much concerned about her condition, she presented herself at the hospital, where the case was referred to the surgical side for examination.

When seen, she was suffering from severe pain all over the abdomen, which was associated with general abdominal tenderness and decided regidity of the abdominal walls, but more severe in the right iliac region. Palpation over this area never failed to elicit tenderness, though the appendix could not be made out. Operation was suggested and agreed to.

April 19, 1894, patient was anæsthetized and the grid iron incision, as suggested by McBurney, was made. Upon opening the peritoneum a mass of adhesions were encountered which were ligated and incised.

After some difficulty the appendix was located behind the ovary. On withdrawing the appendix the ovary and tube were found adherent to it. The ovary and appendix were markedly distended by cystic fluid. The appendix measured about six inches.

The tube, ovary and appendix were ligated and excised, the stumps cauterized with crude carbolic acid and the peritoneum stitched over the denuded surfaces. The abdomen was carefully closed by separate sutures. Uneventful recovery followed, and the patient was discharged, cured, eighteen days after operation.

In conclusion, it may be said, that there are a certain number of cases of appendicitis, occurring during pregnancy, in which it may be safe and proper to pursue a waiting policy, yet in view of the dangers threatening patient and fœtus from a far-advanced sepsis, especially during the later stages of pregnancy, it may be safely said that the prognosis depends upon the earliness of the diagnosis and the promptness and thoroughness of the medical or surgical measures taken to fulfil the indications.

THE CLINIQUE.

Rheumatism.—William L., age forty-one. The patient presents a history of exposure to cold and wet. He had a case of lead-poisoning and syphilis some years ago, otherwise has been perfectly well until two days ago, when he was suddenly seized with a sharp, shooting, agonizing pain under the patella (right). The pain grew steadily worse, and knee swollen up during the course of twenty-four hours. Then all of the characteristic symptoms of rheumatism developed, with which you are all so familiar. The chart shows a persistent, although slight, fluctuating temperature.

I purposely present this case of typical acute arthritic rheumatism so as to impress the importance of guarding the heart in all early cases of this pathological affection. A peculiar coincidence in this case is that the patient remembers having had rheumatism in his right ankle four years ago, when he also suffered from pain over the entire region of the precordium.

An examination of the knee shows that it is not markedly red, and yet it is distinctly swollen and quite hot. Furthermore, fluctuation is distinct in all the bursæ about the knee joint.

Examination of the Heart.—We can make out no murmur over the aortic cartilage, although the heart sounds over this region are feeble. Over the mitral area, at the apex, we note a distinct prolongation of the first sound, plus a soft blowing sound, indicating a probable alteration in the mitral leaflets, viz., the so-called rheumatic endocarditis. This latter condition is usually overlooked early, and is only established later, when thickening and contraction have already damaged the previously crippled valves and a chronic case is established. If looked for early in all your cases of acute rheumatism, prophylaxis can be instituted and most of these troubles avoided. This patient presents none of the characteristic cardiac *symptoms,* and the mitral murmur is so soft that we may state that this endocardial complication is due rather to the present than the former attack of rheumatism. This case also illustrates how well endocarditis may exist without pain, dyspnea, fever or other cardiac symptoms.

Another valuable point to be remembered is that it is always suspicious to hear a prolongation of the first sound, as this is a most indicative sign of rheumatic endocarditis, and a very early sign, too. The soft sound accompanying this prolongation reinforces this statement, as a harsh (not loud) sound indicates a more pathological advancement. I would therefore urge you to look for these signs in all early cases of rheumatism.

Treatment.—The ordinary measures of hygiene and diet must be enforced. All exposure to cold and wet and heavy labor must be prevented. As for therapeutic measures, we should employ pilulæ ferri iodide for at least two months after the attack.

For the attack we may employ sodii salicylal in gr. xx. doses, t. i. d. and the linament Gaultheriæ locally. A very good routine prescription in all such cases is the following:

(a) *General*:—℞ Sod. Iodidi.....3ii
Sod. Salicytal.....3iii
Syr. Sarsparilla Comp. y. s. f℥iii
M. S. 3i t.i.d. after meals.

(b) *Locally* Ol. Gaultheriæ.....f℥ss
Linament. Chloroform.....f℥iss
Sig. Locally night and morning.

I am no believer in the use of an ice-cap in the treatment of fever due to rheumatism. It must also be remembered the salicylates should not be continued too

long, as they affect the blood and secondarily act as depressants. Four or five days is a sufficient consecutive period, when we can substitute if necessary.

Pleurisy with Effusion.—William O'B., age forty-seven; admitted October 11, 1902. Was attacked by a sharp, needle-like pain in the right side four days ago. The pain was referred to the shoulder and through to the back. Also complained of feverishness and shortness of breath, the latter dating back over a period of six weeks. He had pleurisy twenty years ago.

Examination shows expansion and marked dulness on the right side. Also the absence of breath sounds and diminution of tactile fremitus over this area. Friction sounds, of a to-and-fro character, are plainly audible over the right base. We also note hyper-resonance over the right apex, the so-called scodaic resonance. We may plainly distinguish the obliteration of the intercostal spaces. Percussion also brings out distinctly a movable dulness, when we percuss in the erect and lying postures. The note is almost flat at and below the fourth interspace, anteriorly and posteriorly.

We must never forget that we may have a pleural-pneumonia with exudation, otherwise the formation of an empyema may quickly follow, being favored by the deteriorated system. A simple pleural effusion is generally very bland and does not incite fever by itself, but it is rather due to an inflammatory condition of the pleura itself. *In tubercular cases it is very rare to have an associated effusion; here we have a plastic exudate instead.*

We note by the chart that the temperature fluctuates more or less above the normal, the pulse ranging from 64 to 96, and the respirations between 20 to 32.

The febrile disturbance may be due to many reasons, but in the case at hand it is due solely to his chest condition (shown by exclusion). There is no evidence of consolidation in his chest.

The cases of tubercular pleurisy do not get well so soon, but are rather prolonged; whereas the non-tubercular pleuritic cases improve steadily, as a rule, *i. e.*, barring possible complications.

Treatment of Vomiting in Children.—Mary M., age four months. The child had been fed by the breast for one month, when infant feeding was resorted to. It was immediately noticed that the child vomited immediately, or nearly so, after the ingestion of these artificial foods. During the second month the child had a severe attack of furunculosis—an uncommon thing in healthy, maternally fed children, and frequently noticed as a result of imperfect metabolism as a consequence of faulty diet. The child was placed on barley water and calomel, but the vomiting continued. Cinnamon and lime water were then tried, with the addition of liquid peptonoids as a "food" (but in my opinion rather a stimulant). The vomiting ceased for a period of three days, and then spontaneously began with renewed vigor. The next measure was the administration of peptonized milk and castor oil, the latter for the purpose of cleaning out the gastro-intestinal tract of any irritants that might cause reflex vomiting. The condition seemed to grow worse, and a severe and diffuse colic was now superadded. The child then received a mixture containing whey ¾ and barley water ¼ with the reinforcement of bismuth subnitrate. The Pharmacopeia having been exhausted, and the condition of the child being very unfavorable, the child entered into our care with the appended diagnosis of chronic catarrhal gastritis on September 27th.

With the administration of a single drug, but with the most careful regulation of the diet, the child has not vomited since admission. Careful questioning showed that during its three months' illness the child had literally been "stuffed"with nourishment whenever it cried, irrespective of intervals—the only result of which can follow gastric irritability and hence the persistent vomiting. In our hands the intervals were stringently regulated, irrespective of the child's mimic demands, and the character of the food was based on the formula: Fat, 3-4 per cent.; sugar, 6-7 per cent.; proteid, 1-1½ per cent., with the result that you see before you. This case, the like of which constitutes a great percentage of those brought to the private practitioner, is in very close relation to a most important phase of pediatrics, viz., the recognition of the *cause* and the significance of the vomiting of children. This a is very common symptom in disorders of children and one which leads to the most frequent, and at times most serious, errors. Before entering into a careful study of the pathological causes, it is always well to remember that certain anatomical features in the child predispose to the symptom—for such it always is—under discussion. Thus (1) for embryological reasons, the stomach assumes a more vertical position, thus mechanically favoring this event; (2) the nervous system is far more sensitive, thus favoring the expulsion of even the slightest of irritants.

Thus it is an undisputed fact that the practitioner must appreciate the advantage of the causal factor being early recognized, and even more so, the serious results, both to himself and his patient, that usually *do* follow any failure on his part to do so. With these ends in view, I have prepared a convenient and ready summary of the causal factors of vomiting in children which can be quickly and advantageously applied to all such cases with nothing but beneficial results.

Regurgitation or mild vomiting is noted in healthy children, usually a few moments after the ingestion of food—and as the name implies, it is rather a "regurgitation" or overflowing than a true vomiting caused by pathological conditions. In this condition only a very slight quantity is expelled, and this is only slightly, if at all, curdled by the rennet of the stomach; hence we have a characteristic absence of odor, nor is it sour, which does not designate any illness. It is traceable to a natural tendency or to slight overfeeding, hence it may be said to be a conservative act on the part of nature. No general treatment is indicated, other than a caution against overfeeding, or what is just as important, rapid feeding.

Vomiting from overloading, without indigestion, is noticed in children (as in the appended case) who are "fed whenever they cry," both by day and by night. It is also characterized with a mild, or even severe colic, in which case we may suspect also a slight incipient dyspepsia. Owing to this "cramming" the stomach grows exceedingly irritable in time and as a consequence it vomits everything. As in the previous form the milk is not sour.

Vomiting due to indigestion.—In this variety the milk is sour, due to the products of fermentation—hence sour vomiting, which is rightly attributed to butynic acid fermentation. This form of vomiting is caused by the many factors which form the primary condition of indigestion, and which are brought out by interrogation. Owing to the fact that these products of fermentation gravitate or are poured into the intestines, resulting in irritation, we might expect to find diarrhea as a frequent associated symptom. This occurs very often, and for the same and other reasons colic is very marked and persistent.

Symptomatic Vomiting.—This class taxes the physician's diagnostic ability and acuteness of thought. Without entering into a lengthy discussion, it is sufficient to remember that vomiting is a prominent symptom in appendicitis, cholera infantum, intestinal obstruction, of which intussusception may be taken as a type. The explanation lies in the fact that the toxins generated in these conditions are absorbed into the system at large, and either directly or indirectly cause vomiting. [It may be well to be reminded in this connection that certain toxic conditions, causing recurring vomiting, due to some poison absorbed by the bowel, may very closely simulate obstruction of the bowel, hence this condition should at all times be held in mind in suspicious atypical cases.]

Vomiting of Infectious Diseases.—This is also probably toxic in character, although no definite proofs, clinical or experimental, have been shown. It is important in the typhoidal cases of children, which are quite frequently ushered in by an attack of vomiting, not traceable to any known cause. It is also an early symptom of scarlet fever, where it is not uncommonly sudden and diffuse. At times it is the only available admonitory sign of diphtheria and very commonly ushers in a pneumonia. This class, if recognized early enough, and in the vast majority of cases the practitioner is at fault for not being sufficiently alert in his queries—will relieve the physician of a heavy burden and, incidentally, the patient much unnecessary distress.

Nervous Vomiting.—This, perhaps, also shades into the toxic variety, and is likewise present in adults. It is almost always a positive symptom—and often the only one—of brain tumor, which, contrary to expectation, is quite frequently met with in children.

Tubercular and Other Forms of Meningitis Causing Vomiting.—This variety is more potent to the general practitioner both as to its necessity of early detection and the serious results which nearly always follow the failure, either by neglect or otherwise, to do so. In all forms of infantile meningitis, and most notably in the tubercular variety, vomiting is a characteristic and persistent symptom. In fact, repeated convulsions, apyrexia, as a rule, the unmistakable dull expression and last but not least, persistent vomiting, may be put down as an almost positive symptom complex of infantile meningitis. It is also a notable fact that in many cases of well marked meningitis of childhood the nervous and psychic symptoms may be entirely absent, hence the important diagnostic value of the symptom we are discussing. I could with ease recite many, many authenticated cases where a diagnosis has been unnecessarily delayed, and in not a few cases with detrimental results both to the patient and practitioner, owing to the failure to account for this persistent "idiopathic" vomiting. I may state here that I make it a ready rule in all such cases to think of meningitis as a possibility at all times, until it can positively be excluded—and I have suffered none the more for my liberality in such cases.

Treatment of Vomiting in Children.—I have always followed the watchword of Osler in these cases, viz., the removal of the cause as far as possible, thus eliminating as far as possible blind astringents and shot-gun prescriptions.

When due to *overfeeding* and similar causes, we must at once stop the food that disagrees with, or starve the child entirely. If, as it very seldom happens, the mother resents such "cruel" treatment, we may give it barley water (which is a weak solution of starch and soothes the stomach), which is quite identical to starvation in its effect. Then we must very cautiously resume its food, according to the strictest hygienic measures. In *hyperacidity*, we naturally administer the well known category of antacids—taking sodium bicarb. as a standard—for neutralization, or we may beneficially combine the soda with bismuth, and although the latter is constipating it is useful in relieving the diarrhea which so frequently accompanies those cases requiring medication. Or the time-worn yet very wise combination of sodium bicarb. gr. j-ij with calomel gr. $^1/_{12}$ often brings the physician in good graces with the household.

In all cases of chronic vomiting, a careful and judicious regulation of the diet, with a thorough stomach washing, accomplishes all that can be hoped for, and it is well known how obstinate many of these cases are to treatment of any kind whatsoever.

Tubercular Peritonitis.—Mary H., colored, age 38, widow. This woman presents a multiplicity of symptoms, which are of the utmost interest and importance. She was admitted in September with great abdominal distention and with the complaint of having lost much flesh and strength. Her social history, as well as her family history, are negative, so far as her present condition is concerned. There is no evidence whatsoever of inherited disease of any kind. She has had the ordinary diseases of childhood. Also typhoid fever at 13 years, malaria at 19 years, and pleurisy at 28 years. She has had several children, and suffered with hydramnios with the last—there is an absolute denial of all venereal disease.

In January of the present year, she suffered from severe pain in the abdomen, which was relieved by a mild opiate. Six weeks later, she suffered from severe pain and distention of the abdomen. The latter gradually increased and the pain grew in severity. There was also an obvious and persistent loss of weight and strength. She also complained of some dyspnea, due to the distention, in all probability. No other symptoms were elicited during this period. The pain was never localized, but was concentrated for the most part in the region of the lower costal border and somewhat below this area.

She has had no menstrual period since January last, hence she thought she was pregnant, for she even noted "quickening" and "morning sickness" and other subjective symptoms of pregnancy.

The abdomen is uniformly large. There is an area of tympany in the central area and movable dulness in the flanks, where pronounced fluctuation can be made out. Aspiration brought forth the characteristic fluid of ascites, and not that of an ovarian cyst.

The liver and spleen are normal to physical examination. Further examination showed the left pleura to be involved by a marked pleural effusion, accompanied by all its characteristic physical signs, with which you are so familiar.

The temperature ranged from 98.5° in the morning to 101+° in the evening. She also had a feeble, rapid pulse and increased respirations. The last two symptoms were obviously brought about for mechanical reasons.

The fluid withdrawn from the abdomen showed all the physical signs, or rather characteristics, of an exudation and not a transudation, viz., it was of high specific gravity, contained much albumin, and also some slight amount of bile. No tubercle bacilli could be demonstrated—and this is usually a most difficult task—but few leucocytes were present. These signs prove that we

have to deal with an inflammatory product, hence an exudate.

The bacteriological examination was not carried out to any great extent.

The temperature range since admission has gradually lessened and presents that of a continuous type.

It is therefore quite evident from the symptoms detailed that some form of infection exists in this case. The tuberculin test was instituted and caused an elevation of temperature, which proved quite significant. An examination of the blood was also carried out, and showed that the leucocytic count was normal and that a slight lymphocytosis was observed in the differential count, which suggests a specific cause. A diminished number of white blood cells or a normal amount may be said to exclude the pus cocci infection and to suggest rather typhoid fever and tuberculosis. The clinical course makes us strongly believe that we are dealing with a case of the latter (I. B.) as no single suggestion of the typhoidal type of infection exists. As there is also an entire absence, or rather a complete denial of specific history, the value of the lymphocytosis, only slight in this case, so far as it points to specific disease, is almost nil. The age of the patient, the characteristic gradual onset, the very slow, measured process, the association of two, and perhaps three inflammatory membranes [peritoneum, pleura, pericarditis (?)], the progressive loss of strength and weight, the slight but persistent fever, the absence of leucocytosis, all favor the theory of tubercular infection.

Cases of multiple inflammations of the various serous membranes have been reported as being caused, in common, by the liver—and as being also associated with an inflammation of the pericardium and the mediastinal tissues. The association of serous inflammation with hepatic cirrhosis is an undoubted fact. The mechanism of this peculiar association is not known, but is thought to be due to (1) the toxic substance forming in the liver primarily, then causing perihepatitis and peritonitis or (2) to the interference with the portal circulation, whereby an ascites develops as a consequence of stasis. But modern views go to show that the great majority of these cases are tubercular in their nature. This interesting disease has been frequently studied under various denominations, viz., as "chronic multiple progressive hyaloserositis" (Dr. Noble) and as "polyorromenitis" by various Italian authors of repute.

The Treatment is essentially divided into two parts, viz., (*a*) *Local*—This consists essentially in paracentisis (aspiration being disregarded owing to the possibility of "sucking" a knuckle of gut into the needle). We freeze a point, selected in the linea alba, midway between the pubis and the navel, with ethyl. chloride or antidolorin. It is important to see that the bladder is catheterized in all these operations, as now and then distended bladders have led clinicians to think that they had free fluid in the abdominal cavity—and in few cases, fortunately, with disastrous results. It is preferable to have the patient in an upright posture, and to employ artificial pressure by means of circular bandages about the abdomen to support the intra-vascular equilibrium and so prevent syncope, with its entire syndrome. Dress the puncture with collodion and gauze to prevent further leakage.

(*b*) *General Treatment* consists essentially of absolute rest. We should aim in every possible manner to augment strength and add to the general nutrition. The examination of urine showed the presence of a slight trace of albumin and a few granular and hyaline casts, but in a case of this kind these results are due rather to stasis within the kidney than to organic changes, hence no medication is required. If the ascites returns and continues to do so after frequent tappings, then we should resort, as a final means, to a laparotomy and also drainage, which is the most proper course in cases ot tuberculous peritonitis. I have seen such cases relieved by the mere opening of an abdomen, for it appears that the entrance of air alone serves to benefit the condition. The fibrous or plastic variety of tubercular peritonitis is not benefited by such recourse to laparotomy and drainage.

Intermittent Fever.—James H., age 61; admitted September 9, 1902.

This patient presented a history of acute alcoholism at the time of admission, and complained of the well-known group of symptoms, viz., chills, fever and sweats. On admission his temperature registered 105°, which was followed the next day by normal, but was followed on the succeeding day by 104.4°. At this juncture quinine was administered, and in a comparatively short interval the temperature fell below the normal. One remarkable feature in this case was the exceedingly slow pulse, 44 per minute, accompanied by a very feeble cardiac impulse and heart sounds. The malarial poison, *per se*, could scarcely produce such a slowing of the pulse; in fact, the febrile condition should rather have accelerated the pulse.

On physical examination we find that the *lungs* are resonant, but the respiratory sounds are somewhat feeble. The *heart*, although considerably weakened, shows no evidence of organic disease. The *liver* extends to a point one finger's breadth below the costal border. The *spleen* is palpable, and is quite enlarged to percussion.

As has been so clearly demonstrated, the mosquito is the sole cause. But in my own opinion, based on a large experience, the plasmodium may be transmitted through drinking water and by way of the respiratory passages. we have reported several cases from the Spanish-American War where in many soldiers the cause of the malaria was directly traceable to drinking water. This was illustrated by the fact that in the same atmospheric surroundings on several large vessels malaria was present only when the crew employed ordinary drinking water, and not a single case was reported on those vessels where the water had been distilled, although the same identical conditions, *pro* and *con*, were present in both cases.

Treatment.—As this man is well on the road to convalescence our present aim must be entirely supportative. Thus for his very feeble heart condition we alternate aromatic spirits of ammonia in gtt. xxv. dose every three hours with a mixture containing the following (per dose) every four hours:

℞ Strychnin Sulph.....gr. 1/40
Tinct. Digitalis.....ɱ v
Nitroglycerin .....gr. 1/100

We also employ the time-worn, yet exceedingly valuable, calomel and sod. bicarb. pill to take care of the gastro-intestinal tract. One of the best formulæ for patients convalescing from malarial fever, and one which has met unqualified success in my hands, as well as in the hands of others, is the following, which I most highly urge and recommend:

℞ Acidi Arsenosi.....gr. 1/40
Ferri Pyrophos.....
Quinin. Bisulph.....aa gr. i
Ext. Nucis Vomicæ .....gr. ¼
per dose.

THE ANTISEPTIC AND DIETETIC TREATMENT OF TYPHOID.

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WHILE typhoid fever is as strictly a disease of the intestine as is pneumonia, a disease of the lung, I must confess to having no very large experience with it for two practical reasons: It is an uncommon disease in Buffalo, owing to a naturally fairly good water supply and to systematic warnings by the Department of Health, whenever the water becomes at all suspicious; most of the cases that do occur, amounting only to about one case in two years, for each physician, are treated by general practitioners, either in private practice or in hospital services. Some years ago, I reported favorably results from an antiseptic management and the following case may be taken as a fair example of several seen subsequently.

Miss B. called at my office on the evening of Oct. 23, thinking that she had an exacerbation of a colitis for which she had been under observation. Her temperature was 104, pulse 120, falling to 104 after going to bed, and she manifested the ordinary symptoms of beginning typhoid—or, for that matter, of almost any febrile disturbance. The differential diagnosis lay among typhoid, acute inflammation of the appendix and tubercular fever, the last being suggested by a chronic inflammation of the knee at first regarded as tubercular by her attendant, but this diagnosis was finally set aside on account of her complete recovery, eight months previously, after breaking up adhesions. Physical examination was negative, except by eliciting some tenderness in the right inguinal region. Malaria practically does not exist in Buffalo and some other conditions theoretically required exclusion, are extremely rare. Examination of the blood on this and the following day showed leucopoenia so that acute inflammation of the appendix could be excluded with reasonable certainty, but the differentiation between typhoid and tuberculosis required further study. By the way, I may mention the practical advantage of Jenner's blood stain which can be applied in ten minutes, including the qualitative microscopic study. In this instance it was made, with sufficient exactness for the immediate purpose, after a carriage was summoned and without delaying the patient at all. A more careful examination was made later in the evening, but without changing the practical deductions. The blood showed no agglutinating power on the 5th and 12th days, but the test was not made until two months had elapsed on account of various delays. (Kindness of Dr. Wm. G. Bissell.) The Ehrlich test, as usual in patients under the treatment to be described, was uniformly absent and indican was never excessive nor the stools offensive. The spots on the abdomen were also scanty, there was no delirium and the patient was comfortable, after the first day or two of relatively high fever.

The treatment is as follows: Diet: Milk, cocoa, occasionally broth, every four hours, four or five feedings in 24 hours, with toast, cereal and occasionally a little meat, chewed but not swallowed in mass. Water about 1000 C.C. daily, between feedings. Alcoholics, in small doses, as needed to stimulate digestion, not needed in this case and rarely used more than a few times. I regard the ultimate effect of alcohol to be depressing, though its immediate effect in stimulating appetite and digestion may more than counterbalance its real physiologic action. Antiseptics: Salacetol 0.25 2 hours P. C. t. i. d., charcoal, powdered and thoroughly dried, 2. C. C., 2 hours after every feeding, inunctions on Crede ointment, once daily. Hot injection into bowel of decinormal salt solution, once or twice daily, calomel in divided dose, during first few days of fever. The charcoal is really intended to absorb poisons, rather than to act as a true antiseptic. The injections, not only clear out the lower bowel, but act as a stimulant. I have used benzozone, now termed acetozone in several cases, including two or three of typhoid. It is a good antiseptic, but rather irritating and, practically, it does not seem to be superior to other drugs. Salacetol is practically equivalent to salol but, on account of the substitution of an acetyl for a phenyl radicle, it is safer for continued use. In other cases, naphthalin, iodoform, etc., have been used. On the whole, salacetol has proved most satisfactory, but I would, by no means, be understood to recommend it to the exclusion of other drugs.. The benzoic compounds do not give so good results as the salicylic.

Strychnine was given in two-milligram dose twice daily, on account of the general condition of the patient, which was an indication for this drug, irrespective of the fever. Trional was given for the first three nights. It was scarcely necessary to use it afterward and if a hypnotic had been needed, I should have selected bromid.

The temperature chart is the usual one in cases thus treated. In speaking of the antiseptic treatment of typhoid, I am very much in doubt as to whether we influence the typhoid bacilli, although I have seen two or three almost miraculous reductions of temperature, leucocytosis and, apparently, genuinely septic symptoms in non-typhoid cases, following the use of Crede ointment, that I am prepared to believe more than half that has been claimed for this preparation and it may be that the silver or even the salicylic compounds circulating in the blood, day after day, actually reduce the virulence of the typhoid bacilli.

However, it seems more probable that what is accomplished is an elimination of the usual complications of typhoid fever, and that typhoid in the pure form, unless exceptionally virulent at the start or unless involving the meninges or some special site in connection with vital centers or viscera, is a comparatively mild process, producing pyrexia and marked by an intestinal exantoem, but not especially prone to produce grave metabolic or metastatic changes. Under the older treatment, the typhoid

patient is half starved, occasionally quite drunk, and I believe that most of his symptoms and tendencies to remote, septic results, are due to a secondary intestinal sepsis and toxaemia which is largely dependent upon the custom of feeding with milk and animal products, which afford an excellent culture medium for the bacillus coli communis and the bacillus lactis aerogenes. By antiseptics and moderate variey of diet we may lessen the virulence and probably the population of these germs in the intestine while the charcoal protects the system generally from the depressing influence of toxins.

The patient had been seen quite frequently previously to the attack of fever, so that we may be certain that the 23d of October was not more than the third day of the disease. Thus morning defervescence is seen to have occurred on the 12th day and practically permanent defervescence on the 19th.

Some may prefer to consider this as a case of paratyphoid. The extreme delay in examining the dried blood mounts—which was nobody's fault, but due to a series of misfortunes in obtaining cultures—renders it doubtful whether the case was typhoid or not. The Ehrlich reaction is not to be expected in cases thus treated, and all the ordinary clinical evidence was in favor of the diagnosis of typhoid. However, a "para"-bacillus sufficiently virulent to produce the manifestations of typhoid deserves the same serious consideration as the true typhoid bacillus and some authors object to the distinction of a para-disease, at least from the clinical standpoint.

Sublamine as a Hand Disinfectant.—Dr. H. Fueth, assistant in Prof. Zweifel's Gynecological Clinic, at Leipsic University, in a "Contribution to the Subject of Hand Disinfection," details the excellent results obtained from four series of animal experiments made with ethylenediamine citrate of mercury. The hands were infected with a virulent culture of tetragenus organisms (the method is given in detail), disinfected with soap spirit (by Mikulicz's process), and the skin scrapings administered to some guinea pigs by intraperitoneal injection; they all died from tetragenus infection, as did some control animals. The same process was employed previous to and after disinfection with mercury citrate ethylenediamine, but none of the animals developed tetragenus.

In discussion, Dr. Graefe asked if mercury ethylenediamine citrate is identical with sublamine.

Dr. Fueth answered that sublamine is mercury ethylenediamine sulphate. It has been chosen because it can be prepared in pastil form; this cannot be accomplished with the citrate.

Dr. Graefe: I have been very glad to employ sublamine. In contrast to corrosive sublimate, my hands stand it very well, and I do not get eczemas from its use.

Dr. Zweifel, replying to a query as to the cause of the comparatively high price of sublamine, stated that it was due to the fact that the ethylenediamine contained therein is an alcohol derivative.

Iodide of Ethyl in the Treatment of Whooping-cough. Dr. Arnat recommends the inhalation of iodide of ethyl as a means of cutting short the paroxysms of whooping-cough. No apparatus is necessary; the stopper is removed from the bottle and the patient merely inhales the vapor. It is claimed to be peculiarly serviceable in the cough of children from two to five years of age, and in those in whom the paroxysm terminates in vomiting, or in suffusion of the conjunctival vessels.

Egg in Felon.—The skin of an egg has been recommended in felons, but does not seem to be very efficacious. Dr. Whitman, in the *Medical Visitor,* says that for the last fiteen years he has used the whole egg and has yet to see a case it will not cure, if it is a real bone felon. He uses it thus: Take a fresh egg and crack the shell at the larger end, making a hole just large enough to admit the thumb or finger, whichever it may be, and forcing it into the egg as far as you can without further rupturing the shell. Wipe off the egg which runs out, and bind around the whole of a handkerchief or soft cloth; let it remain on over night, and generally the felon is cured; if not, make another application. Dr. W. has yet to see the case where it has failed, and would be pleased to hear from any one trying this where it has not cured.

Diet vs. Drugs in Diabetes. At a meeting held by the society of medicine of Zurich (*Therap. Gaz.*) Dr. Eichhorst expressed his views on the treatment of diabetes, and the relative importance of the use of drugs and dietetics in this disease. Professor Eichhorst has made it a point to compare the action of various drugs on different patients, some being given an ordinary diet; others having a strict diet, and showing a small amount of sugar in the urine; others, again, who, notwithstanding this, still have a large amount of sugar. From these experiments Dr. Eichhorst has come to the conclusion that in all cases the use of drugs is absolutely without result. Even in cases of syphilitic infection iodide of potassium or mercury is totally ineffectual. Hence it is best not to give any drugs, as patients are apt to follow less strictly the diet prescribed because of their reliance on the action of the drugs. As for the use of mineral waters, such as Neuenahr and Carlsbad, he considers that the results obtained are chiefly due to strict regimen. There is but one good treatment of diabetes, and that is the diet. Professor Eichhorst, however, does not believe in changing the latter abruptly, as the sudden suppression of all farinaceous food is apt to produce severe gastric trouble, rapid emaciation, and to bring about the appearance of diacetic acid and acetone in the urine. When the diet causes much loss of strength and emaciation, Professor Eichhorst allows a small amount of bread and sugar, as he prefers a diabetic with sugar in his urine and in good condition to one who is depressed though the sugar may have disappeared. Alcohol should not be used, but light coffee or tea is tolerated. The characteristic of this treatment is the gradual establishment of the diet, controlled in its effects by weighing the patient regularly.

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Although vanity and pretense may flouish for a day there can be no lasting triumph not founded on the truth.

It is not wealth that counts in the making of the world, but character, and character is best formed amid those surroundings where every waking hour is filled with struggle, where no flag of truce is ever sent and only darkness stays the conflict. Give me the hut that is small enough, the poverty that is deep enough, the love that is great enough, and I will raise from them the best there is in human character.

GRADUAL UNFOLDING OF SCIENTIFIC THOUGHT.

THE history of almost every great discovery, of almost every step in the line of development, is like the work of creation, an evolution from the first crude thought to its highest perfection, a gradual unfolding of truth until it assumes a practical form and is utilized by practical minds. Many a great discovery which has passed through its creative development has for a time failed in its work because the public was not ready to receive it or because it was not properly introduced. This is illustrated by the discovery of chloroform, which was first made by a retired surgeon in the war of 1812 at Sag Harbor, and to which he gave the name of White Whiskey. Convinced of its anesthetic action specimens were sent to prominent men in our profession and among the rest to Dr. Simpson of Edinburgh who years after, in testing various so-called anesthetics, brought it out from its dusty corner and from its effect upon the person to whom it was administered was convinced of its efficiency and great value. Backed by the name of the illustrious surgeon the almost unknown anesthetic assumed a world-wide importance.

The magnificent work accomplished by a proper understanding of septic poisoning and its prevention in antesepsis and for which so much credit is justly due to Lord Liston was simply the working out and perfecting of the well formulated theory of Hahnemann who had gathered together facts scattered here and there through observations of students of nature into the focus of his own scientific mind and crystalized them into an axiom.

It is the tendency of the human mind in the study of the laws of nature to adopt the same illustrations and to reach the same conclusions. Dr. Oliver Wendell Holmes in one of his lectures used the simile about poppies springing up amid the corn as if it had been foreseen by nature that whenever there should be hunger that asked for food there would be pain that needed relief and learned many years later that Mistress Piozzi had been beforehand with him in suggesting the same imaginative reflection in the same words.

Scores of illustrations of the same character are scattered through literature showing that what is often charged upon authors as plagiarism is simply a reproduction of the same illustrations and conclusions drawn from a similar line of reasoning.

The crude beginnings of the differential calculus as traced in the calculations of Archimides, Kepler and others failed to solve modern mathematical problems until Leibnitz and Newton, each following his own method, devised almost at the same time two systems of notation which have become one of the most important branches of mathematics. The simultaneous discovery of "Natural Selection" by Darwin and Wallace and of Neptune by Adams and Leverier, the one in Cambridge and the other in France, are striking illustrations of how scientific thought starting from the same premises follow a similar line of reasoning and reach like conclusions. The erratic motions of Uranus was the starting point with both Adams and Leverier who, ascribing this behavior to the presence of an undiscovered planet, set to work at their calculations and each about the same time, unbeknown to each other, demonstrated the existence of Neptune and located it in the heavens where it was afterwards discovered by the telescope. The first sun picture was made by Prof. John W. Draper in his study in the New York University (then located opposite Washington square), adjoining the room where Professor Morse worked out the problem of the telegraph, antedating by several weeks the work of Daguerre of Paris who without any correspondence with each other had been at work on the same line and who, through the generosity of Prof. Draper, attached his name to the discovery. The after work of the photographer and its splendid results, ranking with the microscope in its aid to scientific study is but an unfolding of the discovery of Draper and Daguerre, each step in its development of increased importance where absolute correctness is required especially in chemical, astronomical, mechanical and pathological work.

Great discoveries are not born in a moment nor are they the work exclusively of single minds. Isolated facts standing alone may be of but little practical value, but grouped together in harmonious relations give results of the utmost importance. A thousand minds may be working in the same field and from their personal observations establish in their own minds the correctness of a principle which has been the evolution of a long period of scientific study.

We have said that the work of Lord Liston in antesepsis and hygiene seconded by the whole medical world is simply the outgrowth of the great truth which Hahnemann brought out in a clearer light than had ever been done before and made it an important part

in his system of therapeutics. Lord Liston and others starting from the same premises and pursuing a similar line of thought have added vastly to its strength and the universality of its application in disease. In the same manner the recognition of the dual action of drugs in the curative treatment of disease which marked the departure from the materialism of Galen to the more spiritual philosophy of Paracelsus and Hahnemann has now become an integral part of the profession, forming the basis for the scientific study of therapeutics recognized by all. This is clearly illustrated by the ablest writers in therapeutics of all schools during the last quarter of the century. Take for instance two of the most important remedies in the materia medica—arsenic and mercury—and notice how clearly the drug action points in smaller doses to the restorative. Every one recognizes at the present time in the drug action of arsenic on the gastro enteric membrane and other parts of the body its indication as the restorative in smaller doses where the symptoms in disease point to a similar pathogenic condition. In the same way the drug action of strychnine is recognized as a key to its restorative action in disease.

In the British Medical Journal, in 1875, there is a report of a series of experiments made by a committee of the British Medical Association conducted by Dr. Rutherford of the University of Edinburgh and M. Vinal which are coroborative of those made by Hughes Bennett, that small doses of mercury or podophyllum short of producing the physiological effects of purgatives promote the flow of bile while the purgative dose has the reverse effect. The double action of mercury in syphilis is forcibly illustrated by Dr. E. L. Keyes, at that time one of the most prominent specialists in that disease in the city, in the Medical Record of January 8th, 1876, and copied into the London Medical Record of February 8th. He says, "Mercury decreases the number of red corpuscles when given in excess: syphilis diminishes the number of red corpuscles below the healthy standard: mercury in small doses continued for a long time in syphilis increases the number of red corpuscles and maintains a high standard of them: mercury in small doses acts as a tonic upon healthy animals increasing their weight: in larger doses it is debilitating or fatal: mercury in small doses is tonic for a time at least for individuals in fair health, not syphilitic: in such individuals it increases the number of red corpuscles." Bi-chloride of mercury in chronic Bright's Disease and aloes as recommended by Dr. Fordyce Barker as almost a specific in the early stage of hemorhoids, both in small doses and both formally condemned are now recognized by men of advanced thought everywhere in the profession as directly in line with the dual action of drugs and their restorative action accounted for on strictly scientific principles. We might go through nearly all of the important drugs in our materia medica and show almost without exception how the physiological action is a key to their use as restoratives, but the above will suffice.

Year by year the profession is becoming more thoroughly grounded upon scientific laws and are working out upon kindred lines of thought the great problems of human life—its vitality and decay. We are emerging from the materialism of the past on to that high spiritual plane where the subtle forces of creation and development ever at work around us are being better understood and more intelligently utilized.

THE NAVAL MUSEUM OF HYGIENE.

ONE of the most interesting places for the physician to visit in Washington is the Naval Museum of Hygiene where he can see what excellent care the government takes of the health of its navy in its modern battleships in comparison with the wooden ships of less than a century ago. In those days the system of ventilation was so bad that it was often dangerous to descend to the lower part of the vessel on account of the poisonous gases collected there. It was said of a portion of the English navy that the vessels in the squadron stunk to such a degree that they infected each other. With the improvement of the battleship which followed the introduction of steam came the improvement in hygiene so that at the present time the system of cleanliness and surgical and medical treatment is equal to any well conducted hospital in our largest cities. In the museum which is under the direction of the surgeon general of the navy can be seen models of the hospital department, including the ventilating apparatus, appliances for handling the sick and wounded, means for applying disinfectants and for using hot air for killing disease germs and operating tables and instruments of the most approved design to meet every emergency.

Another department of the museum under the care of Professor E. R. Noyes, an expert chemist and microscopist, is devoted to strictly scientific work such as the chemical and microscopic analysis of blood, liquid, sputa, etc., and the thousand uses in which the microscope can be utilized in exploring the microcosm of germs and spores; a knowledge of which, especially to the deep-sea surgeon opens a world of information of that minute animal and vegetable life which recent investigators have found such important factors in the cause and progress of disease.

The government has shown great wisdom in establishing at the museum a school, specially adapted to chemical, hygienic and microscopic work. A proficiency in these studies enables the ship doctor as an expert chemist and bacteriologist with material gathered in voyages on every ocean and sea, in every climate and port to obtain information of the greatest importance to the whole world and especially to our profession in a study of climate, in analysis of food, and in bacteriological work, so rich in its investigations of the causes and prevention of disease. The young naval surgeon must pass a post-graduate course of four months in this school after having passed through his examination for admission to the navy, before he can enter upon service. The instruction obtained here is more thorough and minute, and better adapted to his special duties than can be obtained in any medical college or by any specialist.

SANITARY CONSIDERATIONS OF RURAL LIFE.

WHILE there persists a popular belief in the superior wholesomeness of country life, both morally and physically, there is good reason to believe that the modern civilized city affords greater protection against disease and injury than the average resident of the country enjoys. This is shown statistically in two ways: by a comparison of census reports and of deaths, which, in the aggregate, follow quite closely the curve of sickness and injury, though the ratio between cases and deaths is not known; and by the fact that the same rural and village population supports more physicians than in the city, though the expenses and fees increase or decrease approximately proportionately .

An off-hand comparison of city and country death rates does not support our statement, for the reason that there is, inevitably, an assembling of workers in dangerous trades in the cities, with comparatively few exceptions, while the trend of serious medical and surgical cases to large medical centers for treatment necessarily augments the urban death rate on exactly the same principle that a region acknowledged favorable for the treatment of consumptives shows an exaggerated tubercular death rate. In such comparisons we must also distinguish between occupations that are necessarily confined to city or country—for instance, policemen and farmers, respectively—and those counted as urban or rural, on account of convenience and commercial advantages. Moreover, rural life is less differentiated than urban, there are fewer extremes of wealth and poverty and, correspondingly, less opportunity for harmful excess or actual deprivation, so that, theoretically, the resident of the country should be compared with the optimum business and professional class and the more favorably situated wage or salary earner of the city.

The United States census of 1900, under the head of death rate by occupation for "Registration States" abundantly supports the view that the urban life is, for comparable occupations, much more salutary than the rural. The average death rate for all regions and occupations is 15:1,000 population. The very highest rate is for stock raisers, herders and drovers, 32.1, and the only other occupations having death rates above 25 are sailors, pilots, fishermen and oystermen —27.7—and flour and grist millers—26.6. Farmers and those of similar agricultural or horticultural occupation have a mortality of 17.6—17.2, and this excess of a little more than 2:1000 above the average is more significant than it might appear because the vast majority of male residents of the country belong to this group, while no single group is typic of city conditions.The only other occupations having a notably high mortality are as follows: Clergymen, 23.5; physicians, 19.9; brick and stone masons, 19.9, all of whom may be considered equally as urban and rural residents; and those for whom some special element of risk exists, as hotel and boarding house keepers, 22.3 (on account of age, tendency to liquor excess among males and previous misfortune among females); non-agricultural laborers, 20.2 (who represent, in the main, an ignorant class of foreigners and who are predisposed to all sorts of unfavorable conditions, after as well as during working hours); brewers, distillers and rectifiers, 19.7, and coopers, 19.8.

Comparing certain causes of death for farmers, etc., with the general rates, we find this class to be only about two-thirds as susceptible to consumption, age, but to have nearly double the normal risk from rheumatism, a mortality of 1.7, as compared with the normal of 1. from urinary diseases; of 2.71 instead of 2.17 from diseases of the nervous system, which tendency is corroborated by the fact that diabetes and suicide are of nearly double the ordinary frequency; while circulatory diseases and cancer are also nearly twice the normal. Strangely enough, in spite of the close association with large animals and machinery, the traumatic risk of farmers is low, though probably higher than for the corresponding classes of city dwellers.

So far as traumatisms are concerned, beyond the adjuncts of civilization tend to relieve the nervous tension and to do away with the isolation of country life, and both are thoroughly feasible, as demonpneumonia and other respiratory diseases as the avertrite advice as to caution, there are two important points having as their object the more prompt attention of the surgeon—the introduction of telephones and the improvement of highways. Both of these strated by experience.

City residents, in contributing freely to fresh air missions and in making large demands upon the charity of the farmer for the entertainment of the most exasperating class of children, fail to realize that mental health requires mental exercise and pleasant occupation, just as does physical well being, and that the two are interdependent. A generation ago, most of our city and country residents had ties of blood and friendship which afforded each a taste, at least, of the advantages enjoyed by the other. This is becoming less and less true, and while the city child is, in general, fairly well provided with the purely physical advantages for which one must turn to the country, the country child of the less favorably situated class is practically deprived of the education and mental stimulation of a visit to the city. When he grows up he supplies this lack as well as he can, but he is apt to see the seamiest side of city life, and it is possible that we may have here one explanation of the extraordinary frequence of urinary diseases among farmers. There certainly should exist the converse of the fresh air mission so that every country boy and girl might see the better side of city life, receive an occasional stimulation of his powers of observation and learn that the "temptations of a great city" of which he or she hears so much are ignored by the great majority of city dwellers.

The relative prevalence of nervous disorders, insanity and suicide among our rural population and

the undue tendency of population toward cities are evils of great practical importance and not to be disregarded as beneath our dignity, because they demand social rather than physical reform. Such concrete means of communication with other human beings as are afforded by good roads, trolleys, bicycles, telephones and rural mail routes are bound to do much to relieve the situation and it is an encouraging sign that the farmer is insisting upon more leisure, comfort and social diversion for himself and his family. Such details seem trivial, but, as "The noblest study of mankind is man," so the best nerve tonic is human companionship of the highest standard of any phase of civilization.

Both in its social aspect and in its direct physical effects, the diet of the average farmer has been vastly improved in the last twenty years, but it is susceptible of further improvement. A generation ago it was notably lacking in fresh meat, fruit, a variety of vegetables and was often abominably cooked. In many parts cherries and apples were the only available fruits and salt pork, potatoes, corn and beans, bread and butter, and milk, and cornstarch and custard for dessert comprised most of the available viands. The reduction of the cost of sugar, the introduction of prolific varieties of grapes, pears, peaches, etc., and the realization of the necessity of sacrificing for domestic use such marketable articles as eggs, chickens and fresh meat, as well as a general improvement in cookery, has much improved the possibilities of general health.

Sanitary plumbing is beginning to make its way into the country. If the clerk, with a salary of fifty dollars a month, can enjoy such luxuries, the farmer, with an aggregate income in house, produce, fuel and cash several times as great, realizes that he can have a wind mill, a water tank, running water which will increase the longevity of his women folk, a water closet, without which chronic constipation is almost inevitable—for the ordinary privy is a point of dire necessity, not of election—and a bath tub, whose practical value may not be great in health, but which is of much therapeutic value in old age and in existing mild disease. With comparatively little trouble, where land is cheap, filtration may be used to guard against infection of water supply—even one's neighbor's—from sewage or drainage from stables and pig styes.

It is also easy to see that, in the country, the ordinary principles of asepsis, antisepsis and quarantine are more readily executed than in the city. Until fifty years ago the country was favorably circumstanced simply on account of the mathematic rarity of sources of infection and the distance between habitations. Then, the very exigency of the danger in cities compelled the fairly perfect solution of sanitary problems, while the country was left behind largely on account of lack of conveniences and too much reliance on accidental immunity. Even now, our worst epidemics of typhoid, in proportion to population, are in river valleys and in small villages, but these very epidemics are calling attention to the need of proper drainage and filtration and to conveniences for immediate disinfection of the premises. It is only a question of a few years when these lessons will be heeded and when the combined advantages of scientific sanitary measures and of segregation will once more render the country safer than the city, so far as ordinary infectious diseases are concerned. The condemnation of tuberculous cattle and the appreciation of the value of precautions against human discharges are diminishing the number of cases of consumption, and the general adoption of netting is cutting off an important item in the conveyance of both specific and septic germs.

LIMITATIONS TO PRACTICE.

THE legislature of Pennsylvania at its last session had a bill before it requiring adherents of the several schools in medicine, to practice in accordance with the tenets of such schools respectively.

This is in consonance with an opinion which the Times obtained many years ago from an eminent Judge of our Supreme Court. If physicians are to pose as Sectarians, it seems only right that they should be governed in their conduct by the principles which they profess to believe ,and it should be no hardship for the State to compel them to do so, then the public will know what to expect. If, however, we are to have a class of practitioners who are in the true sense of the word eclectic, and who will try to select the best means to a desired end, and will not denominate themselves as Sectarians, then may we expect to see the partitim walls crumble and a single school evolved. whose foundation will be as broad as the Universe, its essentials bound by no dogma, and its "principles of Medical Ethics" encompassed by the Golden Rule. It would be much better for the profession to get together, and agree to respect each other, and now is the time to do it. The time is ripe and the professional mind ready, provided no qualifying adjectives are required in the doing. Where is the Moses that can accomplish it?

"PRINCIPLES OF MEDICAL ETHICS."

AN esteemed correspondent writes us that the document adopted by the Am. Med. Asn. at its New Orleans meeting is not "the Code of Medical Ethics," as some have stated. He says:

"A code is a law, and the association is awake to the fact that it can no longer enforce a code, as public sentiment in the various States differ; hence they adopted what they choose to call 'principles of medical ethics' as 'suggestive and advisory document,' which is a very different thing from a code. This change from a code to an 'advisory document 'is a very important step, and means that the profession does not intend to be bound down in the future, as in the past, by narrow dogma respected by few and observed by only a very limited number of physicians.

Another important step taken was to eliminate restrictions as to consultations; hence a member of the regular profession—or as it is commonly called the old school—is at liberty to consult with any physician according to the dictates of his own conscience. This is perhaps the most important step taken by the medical profession for the last century, and it is of interest to know that it is really following in the footsteps of the New York State Medical Society, which many years ago decided not to be bound by the old code of ethics, and have consulted with any physician they saw fit to meet. Therefore the profession of the country at large has now fallen in line with the New York State Society, otherwise known as the "liberal" school.

Of course each State is at liberty to adopt any code of ethics desired, but it is important to bear in mind that the narrow restrictions heretofore thrown around the profession have been removed and medicine from to-day on will be a liberal profession, regardless of antiquated dogma and rules and of conduct applicable to school children, but not worthy of scientific men of broad education.

The principles of ethics as adopted by the association is the work of a committee of eminent medical men, who conscientiously and fearlessly presented what they believed to be right, and two of these gentlemen, the Chairman, Dr. E. Eliot Harris and Dr. Joseph D. Bryant, are worthy citizens of our own city."

A NEW FIREPROOF MATERIAL.

A NEW fireproof material is described by the *Scientific American:*

It originated in Russia, and takes its name from the Ural Mountains, where a large quantity of asbestos, which constitutes the fundamental component of uralite, is obtained. It has proved a highly efficacious fire-resisting material, capable of withstanding a much greater degree of heat, without exhibiting any apparent effect, than any fireproof material at present on the market. Coupled with this fact, it is extremely light, it is of great strength, is durable, and is manufactured in sheets of varying sizes and thickness, thus rendering it a first-class material for building purposes.

Although asbestos enters largely into the composition of uralite, it is by no means the only important substance incorporated in its manufacture, since asbestos in its pure form, although it will resist high degrees of heat, is liable to disintegrate under the influence of excessive temperature, and this peculiarity to a great extent nullifies its utility.

The most noticeable feature of uralite is the facility with which it may be handled and adapted to other materials as a protection against fire. It can be glued and nailed without any fear of its splitting during the latter process. It is specially available for paneling or other similar purposes, and can be grained or otherwise treated precisely as if it were wood. It does not swell or shrink under fluctuating climatic conditions, is waterproof, and is a complete electric insulator. It is capable of withstanding a great strain —18 tons per square inch in comparison with Portland cement, which is only capable of supporting nine tons—so that it is an ideal material for flooring and ceilings. Its cost is very low—7 cents per square foot.

A practical proof of faith in the fire-resisting capabilities of uralite is afforded by the fact that in London the fire insurance companies have decreased their rates where this material is employed from $5.25 to $1.90. It is being adopted on the overhead railroad of Liverpool; in the Soudan for roofing purposes.

HOW TO WATCH THE GROWTH OF A CATARACT IN YOUR OWN EYE.

IN order to see a cataract in one's own eye, a correspondent of *Health* describes what he calls a simple method which enables a patient to follow the progress of the disease probably better than any oculist can observe it for him. All that is required for the purpose is a piece of card—a visiting card will do—and a needle. Pierce a clean, round hole near the middle of the card and hold the card up to the light, close to the eye, looking preferably in the direction of a piece of blue sky. With the card near to the eye the observer will not see the small hole pierced by the needle, but a comparatively large, faintly illuminated field, with his cataract projected upon it. He is, in fact, regarding the shadow cast by his cataract on the retina. With a small puncture in the card the shadow so thrown is comparatively sharp. But with a normal eye an evenly illuminated field or clean disc will be seen. The writer states that there is in this way no difficulty in mapping out the disposition of foreign matter, and so arriving at an opinion as to whether it is advisable to have an operation or not. As an evidence of his faith in his own prescription, he has made drawings at intervals during the last three years of a cataract which is slowly developing in one of his eyes. He further says that no oculist he has met with is acquainted with this method and there may, consequently, be some advantage in making it public.

AN IMPROVED METHOD OF PERCUSSION.

THE limitations of percussion in thoracic and abdominal disease are quite well understood. In the majority of instances percussion is carried out by tapping with the fingers of the right hand upon the backs of the fingers of the left hand laid flat upon the part. There are certain limitations to percussion, when performed in this manner, that do not obtain when some substance other than the fingers is brought between them and the wall of the cavity to be percussed. The fingers may not fit the part accurately. They inevitably cover a considerable surface, and consequently the vibrations are conducted over a considerable area. Various substitutes for the finger, made of rubber and celluloid, have been devised, which have for their general purpose the limitation of the area which is to be percussed. The disadvantage of

these, as compared with the finger, is that the sense of resistance, which is of such value in diagnosis, is left out.

A method devised by J. Plesch, of Budapest, combines both methods to advantage. He uses the middle finger of the left hand, but instead of laying it flat upon the chest, only the tips of the fingers are brought in contact with the part to be percussed. The finger is bent at a right angle at the second joint and the percussion is made over the first phalanx. In this way the vibrations are limited to a small area, and are accurately brought out. At the same time the vibrations are conducted to a considerable depth into the tissues, because of the limitation of the surface application. More precise data are furnished by this method of percussion than by the usual means. The value of the method has been proven by Plesch, who has confirmed the results by radioscopic examination.

A MEDICAL COPERNICUS?

ELSEWHERE in last month's issue will be found an abstract of the leading points in Dr. Sajous' elaborate paper on "The Ductless Glands as Organs of the First Importance in Vital Functions, and Their Relationship as Such to Disease and Therapeutics." If the facts which the author claims to have discovered are finally established, the entire theory and practice of medicine (granting the correctness of his deductions) will have to be revised and placed on a new foundation. When this is done, Dr. Sajous says, medicine will become a branch of applied science, under whose rules certain remedies will be given and assured results obtained. Scepticism on the part of most physicians, in regard to claims like these, is of course to be expected. We think, however, that a careful study of the essay referred to, if it does not bring full conviction, will at least compel the most conservative to admit that a clearer conception of the nature of "the vital process," *i. e.*, of the *normal* tissue-changes upon which the existence of the cellular elements depends, is essential if we would gain an insight into *morbid* tissue-changes, and thus eliminate the obscurity in our present knowledge of disease.

Dr. Sajous' investigations cover a period of over fourteen years, five of which were spent in clinical practice in Paris, and his array of observed facts, and abundant citation of authorities sufficiently attest his fitness, in point of industry and erudition, for the arduous task he has undertaken, and which, he tells us, is by no means finished.

—A London instructor of parrots makes a specialty of training them to be advertisers. They are taught so that whenever they see any one enter a shop they say, "Have you tried So-and-So Milk Porridge?" or "Hair Restorer?" or whatever the commodity is. The parrot's cage, bearing a label advertising the patent commodity, stands on the shop counter, and the bird "puffs" the article all day long, for he has been purposely taught nothing else.

BIBLIOGRAPHICAL.

A MANUAL OF DISEASES OF THE EYE FOR STUDENTS AND GENERAL PRACTITIONERS.—By Clarence A. Veasey, A. M., M. D., Demonstrator of Ophthalmology in the Jefferson Medical College; Assistant Ophthalmic Surgeon to the Jefferson Medical College Hospital; Ophthalmic Surgeon to the Methodist Episcopal Hospital; Consulting Ophthalmologist to the Philadelphia Lying-In-Charity. Illustrated with 194 engravings and 10 colored plates. Lea Brothers & Co. Philadelphia & New York, 1903. Octavo pp. 412.

The author has accomplished a very difficult task in this manual, in presenting in a systematic, practical and concise manner only those facts concerning his subject, which will be of most service to students and general practitioners. The volume contains all that can be expected a non-specialist to know about the eye, and it is presented in an attractive way so that it can be easily mastered. The book will become popular without a doubt, for the purpose intended.

INTERNATIONAL CLINICS.—A quarterly of illustrated chemical lectures and especially prepared original articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest to students and practitioners by leading members of the medical profession throughout the world. Edited by A. O. J. Kelly, A. M., M. D. Volume I. Thirteenth Series 1903. Philadelphia. J. B. Lippincott Company. pp. 306.

This volume is well up to standard set by this excellent publication, and in addition to many leading articles by some of the most eminent authorities in the profession, nearly one hundred pages are devoted to an interesting and instructive review of the progress of medicine in all its branches, during the year 1902. This work has richly demonstrated its right to continue, and we are glad to see that it has evidently met a professional demand.

PRACTICAL HANDBOOK OF THE PATHOLOGY OF THE SKIN.—An introduction to the Histology, Pathology and Bacteriology of the skin, with special reference to technique. By J. M. H. MacLeod, M. A., M. D., M. R. C. P. Assistant in the Dermatological Department, Charing Cross Hospital; Physician to the Skin Department, Victoria Hospital for Children. With eight colored and thirty-two black and white plates. Philadelphia. P. Blakiston's Son & Co. 1903. Octavo pp. 408. Price $5.

This handbook based upon a series of practical demonstrations covering years of research, will be found of great service to students. Its sub-title well describes its scope, and it is what it professes to be, a practical introduction to the study of skin diseases, and it is the only work of its kind in existence. The majority of the illustrations are original ,and all of

them combine accuracy with clearness. The text is classically written, in a concise and clear manner, and the book is worthy a place in the hands of every student of medicine. The physical part is also in accordance with the book—makes best art.

TUBERCULOSIS.—Recast from Lectures Delivered at Rush Medical College, in affiliation with the University of Chicago. By Norman Bridge, A. M., M. D., Emeritus Professor of Medicine in Rush Medical College; Member of the Association of American Physicians. Handsome 12mo volume of 302 pages, illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $1.50 net.

In this excellent work the practical side of the care and management of those sick with the various non-surgical forms of tuberculosis has been concisely stated. Full consideration has been given to prophylaxis an all-important phase of the subject that has heretofore been much neglected. There are also chapters upon the Bacillus of Tuberculosis; on the Pathology, Etiology, Symptoms, Physical Signs, Diagnosis, and Prognosis of the disease, each treated in the judicious and thorough manner to be expected in a work by such a well-known authority as Dr. Bridge. Treatment is accorded unusual space, there being chapters upon Hygienic Treatment, Management of the Diseased Lung, Climatic Treatment, Medicinal and Local Treatments, Special Treatments, besides a chapter devoted to the subject of Sanatoria. The work is a most valuable one, and worthy of consideration.

MEDICAL JURISPRUDENCE, INSANITY AND TOXICOLOGY.. By Henry C. Chapman, M. D., Professor of Institutes of Medicine and Medical Jurisprudence in the Jefferson Medical College, Philadelphia. Third Edition, Thoroughly Revised, Greatly Enlarged, and Entirely Reset. Handsome 12mo. volume of 329 pages, fully illustrated, including four colored plates. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $1.75 net.

This work is based on the author's practical experience as Coroner's Physician of the City of Philadelphia for a period of six years. Dr. Chapman's book, therefore, is of unusual value to the medical and legal professions, presenting, as it does, the information gained from active participation in medicolegal cases. This third edition, enlarged by the addition of new matter to the extent of seventy-five pages, has been entirely reset, and it is evident that in its preparation every page has undergone a careful scrutiny, so as to include the very latest advances in this important branch of medical science. Much of the matter has been rearranged, the text has been more fully illuminated by additional references to cases, and a number of new figures and tables have been added.

The work covers the field completely and thoroughly, nothing of practical importance to the physician or lawyer having been omitted. There is no doubt that the work will meet with as great favor as the previous edition—a popularity which it certainly deserves.

A MANUAL OF CLINICAL DIAGNOSIS BY MEANS OF MICROSCOPICAL AND CHEMICAL METHODS FOR STUDENTS, HOSPITAL PHYSICIANS AND PRACTITIONERS. By Charles E. Simon, M. D. Baltimore, Md. Fourth edition. Thoroughly revised. Illustrated with 139 engravings and 19 plates in colors. Lea Bros. & Co. Philadelphia and New York.

The perfection in diagnosis which is now the password in medical science, can be traced in a great measure to the minutia and accuracy of laboratory work in which clinical chemistry and microscopy play a most important part. The work of Dr. Simon in its clear statement of scientific facts, its fullness and accuracy of information has in the four editions through which it has passed during the last five years, done as much, if not more, than any other work for the present increased knowledge of pathological conditions and correct diagnosis. The efforts of the student and the physician in obtaining a working grasp of precise diagnosis, are aided by a clear and simple statement with all necessary instructions for the best methods for that laboratory work which reveals not only pathological conditions, but also points a way to the best line of treatment. The author has presented chemical and microscopical methods in such detail that those who have not had special training in such manipulations will be enabled to obtain satisfactory results.

The subject matter covers the examination of the blood, the secretions of the mouth, the gastric juice, feces, nasal secretions, sputum, urine, semen, vaginal discharges, milk, etc. In every case a description of normal material preceeds the pathological considerations, which latter, in turn, are followed by an account of the methods used in examination.

DISEASES OF THE PANCREAS, DISEASES OF THE SUPRARENAL CAPSULES, AND DISEASES OF THE LIVER. By Dr. L. Oser, of Vienna; Dr. E. Neusser, of Vienna; and Drs. H. Quincke and G. Hoppe-Seyler, of Kiel. The entire volume edited, with additions, by Frederick A. Packard, M. D., late Physician to the Pennsylvania and to the Children's Hospitals, Philadelphia; and Reginald H. Fitz, M. D.; Hersey Professor of the Theory and Practice of Physic, Harvard University Medical School, Boston. Handsome octavo of 918 pages, illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $5.00 net; Half Morocco, $6.00 net.

Professor Oser of Vienna contributes 270 pages to the discussion of the diseases of the pancreas, and Dr. Neusser of Vienna about 25 pages to the diseases of the suprarenal capsules. The diseases of the liver by Drs. Quincke and G. Hoppe-Seyler occupy 571 pages. The clinical information in reference to the diseases, medical and surgical, of the pancreas and suprarenal capsules have been less understood, and less studied than those of any other organ in the body. This has been to a certain extent remedied by recent investigators and the numerous experiments upon animals cited will be of the greatest value to the pathologist, the clinician and the pathological anatomist,

affording an insight into the more deep-seated processes and offering an opportunity of comparing the disturbances of function produced by morbid conditions experimentally induced, with bed side and autopsy observations. In editing these sections the editor has availed himself of the writings of Korte and Mayo Robson, especially the latter's important treatise on the etiology and treatment of chronic pancreatitis. The editorial note on the investigations and discoveries of the active principles and therapeutic properties of suprarenal extract will be found of great value. In the diseases of the suprarenal capsules the discussion of Addison's disease, its pathology and cause are presented with more clearness and more minute detail of scientific facts than we have seen in any other publication. The part devoted to the diseases of the liver includes the most recent and important practice in surgery and medicine. The historical article on Cholelithiasis by Dr. Hoppe-Seyler traces the history of the disease from the earliest period of antiquity to the present time. The triumphs of surgery are clearly shown in the removal of the gall-bladder itself, in cases where other procedures fail.

A Text-Book of Legal Medicine and Toxicology. Edited by Frederick Peterson, M. D., Chief of Clinic, Nervous Department of the College of Physicians and Surgeons, New York; and Walter S. Haines, M. D., Professor of Chemistry, Pharmacy, and Toxicology, Rush Medical College, in affiliation with the University of Chicago. Two imperial octavo volumes of about 750 pages each, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Per volume: Cloth, $5.00 net; Sheep or Half Morocco, $6.00 net.

Notwithstanding there are many manuals upon Legal Medicine and Toxicology we do not know of one which presents such a comprehensive survey in a moderate compass of these most important departments of our profession as the one under notice. The physician and the lawyer will find all the scientific and practical facts necessary in their study of forensic medicine and Toxicology clearly stated with all the minutia necessary to a proper understanding of the subject. We find among the contributors to this work such names as Dr. S. F. Armstrong of the Washington Life Insurance Company; Pierce Bailey of Columbia University; Lewis Balch, Charles Craddock, John Chalmers Dacosta, G. S. Kridg, James Ewing, Walter S. Haines, Josiah N. Hall, Grafe M. Hammond, Edward Jackson, Smith Ely Jellifee, F. W. Langdon, Frederick Peterson, Allen J. Smith. All of these men will be recognised as alienists of high standing and teachers of forensic medicine and Toxicology. The portion devoted to expert evidence is of great value giving advice to the best manner of presenting facts by the expert and to the attorney the best method of obtaining the desired information from the witness. These suggestions if followed by the expert and attorney would add much to the intelligent and rapid progress of the trial and enable a jury to reach conclusions without confusion in accordance with facts. The Bertillon and Greenleaf, Smaut systems of identification now generally used in criminal trials are concisely and intelligently described. An interesting and important chapter is that on the "Destruction and attempted Destruction on the Human Body by Fire and Chemicals," as the guilt or innocence of the accused often depends upon the determination of the human or animal source of the remains. The medico-legal relations of the X-ray has within the last few years become an important factor in diagnosis and is being utilized in medico-legal cases with results obtainable in no other way. This is really one of the most valuable chapters in the book. The responsibility of pharmacists in the compounding of prescriptions, in the selling of poisons in substituting drugs other than those prescribed are matters intimately concerned with questions of medical jurisprudence. The chapters dealing with "Identity," "The Signs of Death," "Sudden Death," "Death from Cold, Heat and Starvation," "Death from Asphyxia, Lightning Electricity and Gun-shot Wounds" are among the subjects treated in this most valuable work. We particularly notice as worthy of the most careful study the chapter dealing with insanity especially from a medical-jury standpoint. The various forms of insanity and their bearing upon the care of property, their progress and probable termination and their danger to the individual and the community are presented with such clearness as to be of great value not only to the friends of the insane, but to the court in its disposition of the cases brought to its notice. The second volume devoted to Toxicology will be issued at an early date.

Suter on Refraction. A Manual of Refraction and Motility. For Students and Practitioners of Medicine. By William Norwood Suter, M. D., Assistant Surgeon to the Episcopal Eye, Ear and Throat Hospital, Washington, D. C. 12mo, 382 pages, with 101 engravings and 4 colored plates. Cloth, $2.00, *net*. Lea Brothers & Co., Philadelphia and New York.

Notwithstanding the two fundamental branches of Ophthalmology Refraction and Motility are so closely connected that an understanding of one is practically impossible without the other. This is the first work in English which covers both subjects in a single volume. To the general physician the book will be especially valuable enabling him to prescribe proper glasses, to direct defect of vision. While the work is simple and clear enough for the student and beginner in Ophthalmological work, it is so comprehensive that the specialist will value it as a handy and trustworthy reference. Illustrations in black and white have been freely used, and add much to an understanding of the text.

Five wards in the Philadelphia Hospital have been established for homoeopathic treatment, viz., a men's surgical, a women's surgical, a men's medical, a women's medical, and a medical and surgical ward for children.

CORRESPONDENCE.

TRAVELER'S DIARRHEA.

To the Editor of the Medical Times:—

Many persons are liable to diarrhea, especially in summer, when traveling. "Change of water" is usually attributed as the cause, but this is only one of a number of etiologic factors.

Cyrus Edson once said that there wasn't a well or spring in the United States that was fit to drink; and if we come down to the facts, the statement was not so very much of an exaggeration. Nearly all water contains some microorganisms capable of setting up gastric or intestinal disorders. Those who are accustomed to the water use it without injury—they are "used to it." But the stranger may suffer, until he too becomes acclimated. The same is true as to the inorganic constituents. A water may contain purgative salts that affect the newcomer, but the old residents have brought their systems into harmony with the water, and would suffer constipation if deprived of it.

Strangers' or travelers' diarrhea is often due in part also to the interference with the regular routine of life. The usual exercise is not taken, meals are different in kind, quantity and time; the motion of cars or other conveyances disarranges the digestion. So it happens that this diarrhea is often an effort of nature to unload a congested liver or impacted colon.

Any injurious effect of impure water may be counteracted by the use of a little zinc or soda sulphocarbolate. They are harmless in any quantity, and if a five-grain tablet is swallowed with each draught of strange water, no possible harm can come from it. A few such tablets carried in the vest pocket may prevent an attack of typhoid fever, while away from home.

Permanganate of potassium comes in tablets containing 1-6 grain, and one of these dissolved in a glass of water accomplishes the same object. Some persons dislike the taste of permanganate, and its use tends to cause hemorrhages in those who have any tendency to them. Plethoric individuals also should not use it. But it destroys organic matter; and thus furnishes a test of the purity of the water and removes its dangers at the same time.

Of all the remedies for the diarrheas of travelers, none is so generally useful as the old-fashioned alkaline syrup of rhubarb, or "Neutralizing Cordial," with the addition of a sulphocarbolate, five-grains to the tablespoonful. I have had this valuable prescription put up in tablets, each representing a teaspoonful of the mixture. This obviates the "bottle and spoon" nuisance; there is nothing to spill in the satchel; the tablets can be slipped into the vest pocket or in a lady's pocketbook; and there is no bad taste. These tablets are so useful that I never travel without them. Many a fellow traveler I have relieved of diarrhea, nausea, sour stomach, fermentation, bad breath, indigestion, sick headache, etc., by giving one of these tablets every half hour till seven have been taken. That is the usual dose—rarely is it needful to exceed it. In severe diarrhea a tablet of zinc sulphocarbolate five grains, and four tablets of the rhubarb mixture, should be given every two or four hours until the stools are healthy and natural.

Take these maladies when they are little and they never grow to be big. Watch the beginnings of disease, said Hahnemann; and we need not disagree with that much of his teachings.

WM. F. WAUGH, M. D.

Atlantic City, N. J., June, 1903.

RETROSPECTIVE THERAPEUTICS.

Eye-Strain as a Cause of Chorea. Albert E. Baker, in *American Medicine*, March 13, 1903, refers to the many children met with who wink incessantly, and for which the child is frequently punished. The winking is due to the error of refraction and the effort made in accommodation. The hyperopic child kept at school tasks finds his ciliary grip on his lens sliding back until the page becomes blurred. He then winks and increases his accommodation efforts and the letters again clear up. After reading a few words or lines the same blurring again occurs and the renewed effort at concentration is made, and thus the habit of winking is acquired. Not unfrequently, sooner or later, a spasmodic closure of the lid is added to the winking, and after a time the whole face participates in the act, accompanied by the peculiar grimaces and muscular movements characteristic of chorea. The author is thoroughly convinced that this is the genesis of many cases of chorea occurring in school children. It is possible these are not true choreas and should be called habit choreas; in any event they are met frequently and are not treated intelligently. The lesson he wishes to teach is this: Send the patient to the oculist first and not waste valuable time giving drugs. Give the spectacles first and follow up with your hygienic and medical measures if necessary. It does seem sometimes that the profession as a whole are very obtuse in adopting new ideas and new methods. Migraine, that typical eye headache which can almost always be cured with spectacles, is still doped, purged and dieted, world without end, forever, until the patient takes the matter into his own hands and consults an oculist. So, too, in chorea, patients are beginning to go directly to the oculist, and not unfrequently against the advice of the family physician. The general practitioner labors under disadvantages in these cases, and, no doubt, suffers in reputation and in pocket therefrom. The remedy for this condition lies in all the profession preparing themselves to fit spectacles, and especially those who have to do with the treatment of children. The practitioner who thinks that because a child sees perfectly the eyes are not at fault makes a serious mistake. Often those who see the best suffer the most from eyestrain. It is not how *much*, but *how* we see that causes trouble. The interdependence between accommodation and convergence is a most prolific source of nervous trouble in children, as well as in older people.

Painful Feet.—Schanz (*Jrnl. A. M. A.*) *describes* the class of patients who complain of pains in the heel, sole, joints or toes, even of obstinate corns, but

in whom examination of the foot reveals nothing abnormal. Such cases are all attributable to flatfoot. The instep may appear normal, when in reality an unusually high instep has been transformed into a very low one and thus be really flatfoot, although it is still within the limits of what is generally regarded as the normal instep. There is no typical localization of the pains of flatfoot. He says that whenever he meets a well-dressed man who clings to old, worn-out shoes as the only ones he can wear with comfort, he is seldom wrong in the diagnosis of flatfoot. Treatment should be that for flatfoot, and he has found a celluloid, rounding sole a convenient appliance. It can be molded to the foot when solt and the shape changed at will.

Olive-Oil in the Treatment of Hematomata.—Dr. Camescasse (*Rev. de Therapeutics,* Dec. 1, 1902) advises the application of olive-oil in all cases of contusion and hematomata. No rubbing in is necessary—it is indeed painful and therefore to be avoided—but the oil is simply sprinkled on or applied on lint. If the skin is broken, a previous cleansing with some antiseptic is advisable. The mode of action of the remedy is not clear, but the rapidity and effectiveness of its operation are said to be remarkable. A black eye thus treated disappeared so quickly and completely that the victim was inclined to complain on the ground that he had no visible injury to show to the police.

Bossi's Dilator in Eclampsia.—The rapid dilation of the cervix uteri with Bossi's four-bladed dilator, and the speedy termination of the labor by forceps or naturally, is the newest method of management of cases of eclampsia in labor. Dr. J. W. Ballantyne (*Brit. Med. Jour.,* Feb. 21) reports three such cases in which he adopted this method; in all, the mothers recovered, but the child was dead in two. In all the cases the patient was in labor when first seen, and there was no opportunity of dealing with the condition by prophylaxis.

The Actinic Rays: Their Use in Minor Surgery.—Edward A. Tracy, M. D., in the *Boston Medical and Surgical Journal,* November 6, 1902, reports three cases in which the rays were used most successfully for anesthetic and antiseptic purposes. In all three cases the part diseased was subjected to the action of the actinic rays for from ten to fifteen minutes. The operations, which consisted in the removal of a large sebaceous cyst, the opening of a subcutaneous abscess and the removal of a skin slough from the palm of the hand were then performed without any discomfort being felt by the patients. After this radical treatment all three parts were exposed to the rays for a period of ten minutes. The injured areas were then dressed with cotton and simple bandages, but no additional antiseptic measures were taken. The wounds healed promptly without any secondary infection. The results of these three minor operations, while not positive evidence that the actinic rays may be of practical value in major surgery, certainly must convince one that here is a field both of anesthesia and antisepsis in which the most conservative may look for remarkable success in the near future.

Rhythmical Head Shaking in Aortic Patients.—Charles Valentino (*Revue de Medecine*) reports fourteen cases of Musset's symptom, of which one occurred in pleurisy, eight in aneurysm of the arch of the aorta, and five in aortic insufficiency. He considers that the case of pleurisy is not perfectly established, and that the symptom is still to be considered as belonging exclusively to aortic affections. It has not as yet been determined whether the sign is systolic or diastolic. The author agrees with Delpeuch, that the presence in aortic patients of this new symptom, which is certainly rare, but very well marked and striking when it does occur, should constitute an indication of a grave lesion, which, until the appearance of the symptom, has been either latent or unperceived.

White Vaseline for Erysipelas.—The new treatment for erysipelas, according to the *Dietetic and Hygienic Gazette,* consists simply in covering the affected area and a portion of the surrounding skin with a thick layer of white vaseline. This, in its turn, is covered with a mask of linen, and held in position by means of gauze bandages. The application is made twice a day. The results obtained by this method are very favorable and gratifying when compared with those following other methods, as painting with tincture of iodine, ichthyol or sublimate solution, etc Fever, as a rule, diminished within two or three days, pain and tension in the afflicted parts were relieved and recurrences were observed with no more frequency than in cases in which other methods were employed. The advantages claimed for this treatmnet are the absence of pain and irritation which accompany the application of iodine or the bichloride.

Coffee in Asthma.—Coffee is a very excellent remedy for asthma. Those who do not know how to cut short their attacks, and have not tried coffee, should do so by all means. It often succeeds admirably, when almost everything else has failed. There are one or two little points to be attended to in taking coffee for asthma. In the first place, it should be very strong —in fact, perfectly black. Weak coffee does more harm than good. If made very strong much of it need not be taken; a large quantity is a positive disadvantage, for it is less rapidly absorbed and only distends the stomach. Then it should be given without sugar or milk, pure *café noir.* It should be given on an empty stomach, for when taken on a full stomach it often does harm by putting a stop to the process of digestion.

The Meaning of Uric Acid and the Urates.—The views entertained by Dr. Woods Hutchinson as to gout and lithemia are summarized as follows (*Lancet,* Jan. 31, 1903); (1) There is no connection whatever between the production of urea and uric acid, hence interdiction and marked limitation of animal or of nitrogenous foods, as such, in gout are irrational. (2) The uric acid produced in health comes exclusively from two sources: the larger moiety, the *exogenous* uric acid, from the nucleins and purin bases of the food; the smaller, or *endogenous* moiety, from the destructive metabolism of the nucleins of the body tissues. (3) It is the endogenous moiety alone

which is increased in gout and lithemia. (4) Gout and lithemia are mere symptom names for a miscellaneous group of chronic toxemic processes of widely varied origin, characterized by the production of uric acid and the urates. (5) By "gouty diathesis" is meant the possession of a sufficient degree of resisting power on the part of the protective cells of the body to oppose the entrance of any poison, whatever its character or source, with consequent destructive metabolism and production of uric acid, but not adequate to neutralize or successfully prevent its absorption. (6) The uric acid of gout, like the phosphoric acid which invariably accompanies it, is merely a result and measure of the destructive metabolism of the nucleins of the body cells, chiefly probably of the leucocytes, in response to the invasions of poisons or toxines, either organic or inorganic (lead, phosphorus, alcohol, acetone). (7) Hence the use of lithia or other solvent agents is irrational, and any benefits resulting from it are to be explained on other grounds. (8) As most of the toxines setting up this destructive metabolism and consequent uric acid production are of intestinal origin or entry, diet in gout should be regulated solely with regard to the diminution of intestinal fermentation and putrefaction. (9) As animal foods are more apt to be indulged in to excess their limitation may be found to be more frequently necessary than that of vegetable foods, but sugars and starches are also very often at fault. (10) As uric acid and the alloxur group are not toxic, or at best only feebly so, and are not the cause of gout, the prohibition of foods rich in nucleins and purin bases, such as red meats, roe, and sweetbreads, has no rational basis, and diminishes the attractiveness of the dietary. (11) The *rôle* of the liver in gout is a negative one, being inability to perform its chief normal function as a "poison filter," and to absorb or to transform into harmless excretory substances the excess of toxines brought to it by the portal vein. (12) The drugs found of value in gout owe their efficacy chiefly to their power of checking intestinal putrefaction or of preventing the absorption or promoting the elimination of its products.

Sulpho-Carbolate in Cholera Infantum.—Dr. Wm. F. Waugh reports great success with this remedy in "Summer complaint, entero-colitis and cholera infantum." His plan is as follows:

Clear out the bowels with castor oil, calomel, mercury and chalk, aromatic rhubarb, lavage, or colonic flushing, as seems best in each case. For lavage I prefer a solution of zinc sulphocarbolate, a grain to the ounce; for colonic flushing this; for rectal flushing or when the type is dysenteric, silver nitrate, two grains to the pint. The solutions should be as hot as bearable. Then follow with the zinc salt, from 1-6 to 2 grains every hour. I have given the latter dose hundreds of times to children in the second summer, without irritation. Some take the medicine in solution, others in granule or tablet, but if there is decided irritability of the stomach it is best in powder with bismuth and pepsin. Where there is extreme acidity marked by excoriation of the rectal mucosa, etc., sodium sulphocarb. is preferable. or the triple salts—zinc sodium and lime.

Atropin may be required to relieve irritability of the stomach. The best diet is the raw white of egg in ice-water, coffee, rice-water, barley water, toast water, followed by meat soups and fruit juices. The juices from fresh, lean beef squeezed out with the family lemon-squeezer, can be given in v—x gtt. doses hourly and in extremely debilitated conditions should be dropped on the tongue *gutt ad gutt* and allowed to trickle down into the stomach. Many a child's vitality can only be supported in this way while curative measures are being carried out. Hot, cold or salt baths are always indicated.

The hygienic condition of the house and vicinity must be made perfect.

Ocimum Viride as a Prophylactic Against Mosquitoes.—The *British Medical Journal* for January 31 refers to a letter in *Nature* for January 1, by Mr. A. E. Shipley, concerning a plant brought home from the West Coast of Africa by Major Burdon, which has been identified by the Kew experts as Ocinum viride, wild. It is a member of the N. O. Labiatae. Captain Larymore, resident of the Kabba province of Northern Nigeria, who gave the plant to Major Burdon, being told by the natives that the reason they kept the plant in pots in their houses was because it kept away the mosquitoes, made a trial of it in his own house, which was particularly infested by the pests, and found that the presence of one of the plants in a room undoubtedly drove the mosquitoes out, and that by placing three or four around his bed at night he was able to sleep unmolested without using a mosquito net. The plant is described in the fifth volume of Sir W. T. Thistleton-Dyer's *Flora of Tropical Africa,* and also on plate 753 of the ninth volume of the *Botanical Register,* 1823, under the name of ocymum febrifugum, or the "Sierra Leone fever plant." The plant is said to be very easily cultivated, so that it should not be difficult to put its virtues to a practical test in this country. Anything that gives promise of prophylaxis against mosquitoes and incidentally malaria, should be given a chance to make good its claims.

Hydrogen Dioxide in the Treatment of Diphtheria.—N. Novikoff (*La Semaine Med.,* June 25, 1902) states that the use of hydrogen dioxide to the exclusion of all other medication, in the treatment of diphtheria gives results quite as encouraging as serum therapy in regard to the number of cures. The false membrane is detached more slowly than by injections of antidiphtheric serum, but the depressant action of the diphtheria toxin is neutralized to a certain extent by the hydrogen dioxide, which favors oxidation. The author directs that the patient gargle the throat night and morning with two or three tablespoonfuls of a 3 per cent. solution of hydrogen dioxide to a glass of water. In very young children who can not gargle, he prescribes hydrogen internally as follows:

Solution hydrogen dioxide...1 to 2 drams.
Simple syrup.....4 drams.
Distilled water.....3 ounces.

One teaspoonful or one dessertspoonful every one or two hours.

In order to hasten the detachment of the false membrane, the throat may be painted with a 3 per cent. solution of hydrogen dioxide two or three times daily. These applications, although painless, must not be repeated too often, as they may cause edema of the soft palate. Hydrogen dioxide gargles also give excellent results in non-diphtheric sore throat and in various forms of stomatitis, especially when of mercurial origin.

Relation of Diet to Body Surface.—Rubner established as a general law (*Modern Medicine*) that the food requirement is in proportion to the surface of the body rather than in proportion to the weight. The surface of a small person is much larger in proportion to his weight than is that of a larger person. The smaller the individual, the more important this fact becomes. Careful measurements of the surface by an ingenious device have shown that a man weighing 180 pounds has a skin surface of approximately twenty square feet. By means of the following simple formula the surface of a person of any weight may be closely approximated: 180:W:203-2:S3-2. In the above formula, W represents the weight of the individual, and S the surface. In a person weighing 180 pounds there is practically one square foot for each nine pounds of weight, or sixteen square inches for each pound. By means of the above formula we ascertain that the surface of an infant weighing ten pounds is practically three square feet, or forty-three square inches to each pound of weight . The surface of the child in proportion to its weight is, then, more than two and two-thirds times that of the man weighing 180 pounds. The weight of the child is one-eighteenth that of the adult. If we determine its food by its weight, its daily ration would be about one and one-fourth ounces, but the first requirement of food for the infant is to enable it to maintain the loss of heat which is taking place from the surface of its body; hence, the amount of food ought to be determined by the extent of its surface, and as it is two and two-thirds greater in proportion to its weight than that of the adult, the ration must be proportionately increased. This would give us three and one-third ounces instead of one and one-fourth ounces (1.25x 2.66 equals 3.53). The child also requires food for increase in weight. A normal infant doubles its weight within twenty-two weeks of its life. Suppose his increase to be ten pounds in twenty-two weeks, this would amount to 1.04 ounces a day. This amount at least must be added to the ration. It is this apparent that the ration must be much more than might be supposed. Instead of being one-eighteenth that of a person weighing 180 pounds, it must be one-fifth, or three times as much as would be estimated if the weight alone were taken into consideration.

Olive-Oil and Olives.—Olive-oil, says the *Pacific-Health Journal*, is one of the choicest and most palatable of foods. It contains the largest amount of nutriment of any food, the total being nearly 100 per cent., while the best grains and legumes contain less than 90 per cent.; animal meat from 22 to 38 per cent.; fruits and vegetables still less. One ounce of olive-oil per diem encourages the action of the bowels, and aids digestion in a remarkable way. A vegetarian diet is generally too poor in fats. The ripe olive, the complement of fruits, contains just what fruit lacks, and makes up a perfect diet, being a wholesome source of fat. It is a good food for sufferers with diabetes and Bright's disease, and all those who, from rheumatism, liver complaints, etc., have lost the ability to digest starch.

It is a good substitute, with its delicate, nutty aroma, for creamery butter swarming with germs, or for nut butter.

In nervous exhaustion and in diseases where the system demands food rather than drugs, it is indispensable. Goddard E. Diamond, who is now 107 years old, retains all his faculties of mind and body, as a man of fifty. He attributes his youthfulness to the free use of pure California olive-oil, both internally and externally.

Potassium Cyanide and Unfertilized Eggs.—The discovery that by means of weak solutions of potassium cyanide he could prolong the life of the unfertilized eggs of the sea-urchin, led Loeb to interpret the action of this drug as an inhibition of the catalytic processes that result in necrobiosis or death. F. B. Gorham and R. W. Tower (*Am. Jour. Phys.*, Dec. 1, 1902), as the result of researches at the Marine Biological Laboratory, Woods Hole, Mass., conclude that the action of potassium cyanide is only an indirect one, *i. e.*, killing or inhibiting the bacteria and thus giving the eggs a more favorable environment. In all experiments with unsterilized sea-water the protozoa enter as an important bacteria-destroying factor which must be considered in interpreting the results. Sterile sea-water prolongs the life of the egg of the sea-urchin much longer than Loeb's most favorable cyanide solutions. Both the experiments of the authors and those of Loeb show that too strong solutions of potassium cyanide and too long exposure to weak solutions soon kill the egg. From this the interpretation is that potassium cyanide is a poison for all living matter, but acts more quickly on bacteria than on sea-urchin's eggs; it is in no sense a prolonger of life. From the fact that unfertilized eggs can be kept in sterile sea-water for eleven days or longer, it would seem that the specific mortal processes of Loeb are as yet hypothetical phenomena without any definite experimental basis.

Feeding in Early Infancy.—J. E. Winters (Med. *Record*, March 7, 1903) affirms that for a newborn child there is but one perfect food—the milk of a healthy mother, because her milk at the beginning of lactation is rich in readily absorbable proteids, and no analysis or synthesis can provide a substitute having the composition and properties of mother's milk at the beginning of lactation—a food adapted to the undeveloped functionless state of the digestive organs. Lactation for a short period after childbirth stimulates uterine contractions and the necessary resolution and subinvolution of that organ. During this early pe-

riod the child should be permitted to nurse until sated, and then placed in a quiet, dark room to sleep. Nursing by clock and scale is an absurdity. For two months the mother's milk is a perfect food for the growing child. Then the proteids diminish and artificial feeding until the end of the eighth or ninth month. The food for the first few weeks should be prepared from cream separated from cow's milk by gravity, not by centrifugal action, as the latter does not leave sufficient proteids in the cream. Destitution of vitalized mineral and proteid is insuperable in manufactured food, and a substitute for milk is as impossible as artificial blood.

Methylene Blue as a Diuretic.—According to Dr. G. Rawls, of Carrsville, Va. (*Med. World*), methylene blue (medicinal) will start the kidneys to acting in suppression when all other remedies fail. He has used it freely for this purpose, in both acute and chronic interstitial nephritis, when the kidneys had almost entirely stopped acting, and it has never yet failed. In one case of albuminuria with pregnancy, when there was nearly total suppression and severe convulsions, the woman not passing an ounce of urine in three days, two doses of methylene blue started the kidneys without trouble. The author usually gives a capsule of 2 or 3 grains, repeated in four hours, and when action is secured, he gives it two or three times a day as may be necessary.

Cocoanut for Tapeworm.—A writer in the *Medical Summary* advises for the expelling of tapeworm the eating of cocoanut for two or three days to the exclusion of all other diet. He claims that the worm will come away entire in every case without the use of cathartics.

Cholera-Infantum Serum.—We are informed that the New York City Health Board are preparing a serum for the summer diarrhea of infants, assuming as its cause the shiga bacillus which has recently been isolated in these cases and used with success.

The Sanitary Advantages of Shaving.—The beard and moustache, if bacteriologists are to be believed, says the *Hospital*, form the happy hunting-ground of numerous microbes. Perfect cleansing of hair is always attended with considerable difficulty. There is, therefore, much sound scientific reason for the custom of shaving. We have often been surprised and amused at the elaborate care with which certain Esau-like surgeons seek to render aseptic their finger nails, while a few minutes later their unwashed and unprotected hirsute appendages are waving over an open abdomen, and even in some instances coming almost, if not actually, in contact with the patient. We hear that the command has gone forth in Germany that all operating surgeons must shave. Whether this be so or not we cannot say, but certainly it is based on right principles. The inconsistencies of scientists are stumbling blocks for the true disciple, and the indiscretions of surgeons often bring surgery into disrepute. Certainly, if the principles of aseptic surgery are to be carried out in practical work, mere esthetics must, if need be, be set aside, and surgeons must be prepared to signify their thoroughness by sacrificing facial adornment, and demonstrating the sanitary advantages of shaving.

Shocks from Electric Light Circuits.—Two men were killed recently at a swimming bath in London by coming in contact with a metal bar charged with electricity by defective insulation of a nearby wire. This whole question of electric shocks is of great interest to the profession in view of the widespread use of electricity. Authorities are by no means agreed as to the exact action of these commercial currents on the human body. It would seem to be established, however, that every individual has his factor of susceptibility, that women and children are more endangered than adult males, and that such diseases as lower skin resistance, *e. g.*, Basedow's disease, diseases of the heart and kidneys, and certain skin diseases, predispose to accidents from electric shock. Of course, the dry skin offers the greatest resistance to the current, moisture lessening the resistance very markedly. Not long ago it was discovered that a person asleep might receive, with comparatively slight result, an electric shock that would kill him were he awake; and it has been determined by experiment that a high tension interrupted current is not only harmless for rabbits during chloroform narcosis, but even resuscitates them at a time when a control animal succumbs to the narcosis. The above facts, and many others equally interesting, are brought out in a paper by Dr. S. Jellinek contributed to the *Lancet* (February 7, 1903).

Dr. Park Blake, a Boston physician, points out that there are 30,000 women in the New England capital who are slaves to the teacup. Everywhere, says Dr. Blake, one finds the kettle and the teacups. The habit has spread to the high school girls, and it is ruining not only their complexions but their health, digestion and brain power. So there are various kinds of intemperance, and alcoholism is not the only evil under the sun.

SURGERY WITHOUT LIGATURES.

At the meeting of the International Medical Congress at Madrid, Dr. Andrew W. Downes, of Phila, read a paper on Electro Thermic Hæmostosis in abdominal surgery giving afterwards at hospitals and clinics in several cities in Europe his method of performing surgical operations without the ligature. His method consists of the use of various sized pressure forceps of special design, in the blades of which is an insulated piece of platinum, heated to a white heat by the passage of a suitable electric current This cautery by which the blood vessels are obliterated is said to be without pain and the process absolutely aseptic.

NEW CAMP FOR CONSUMPTIVES.

During the past year Commissioner Lederle, of the Health Department, formulated a plan for the establishment of a camp of perhaps a hundred acres for the treatment of consumptives. The patients were to live mostly in tents and such as were able to work upon the farm in payment for a part of their expenses. The plan has been abandoned, from the

fact that wherever he endeavored to obtain a location the citizens made a strong protest. The idea, however, has been to a certain extent carried out by establishing a camp on North Brother's Island in the East River, near City Island. Experts have examined the atmospheric conditions and have reported favorably to the location. The tuberculous pavilion in connection with the Metropolitan Hospital is enlarging its facilities by the erection of a solarnarium, and is doing excellent work.

A NEW TREATMENT FOR ALCOHOLISM.

The action of alcohol upon the human organism in moderation and in excess, is, through the investigation which its large consumption has produced upon health, morals and crime, bringing out in clearer light its dual action and defining its character, as a substitute for food, or a simple stimulant, and its terrible drug effect upon mind and body. The scientific study of alcohol as a stimulant in certain conditions of the body shows that it arouses vital force when at a low ebb, and increases the powers of digestion, perhaps better than any other remedy; but carried beyond that point it ceases to act as a restorative and becomes a drug of the most deadly character, producing partial paralysis of the organs of digestion, and an altered nutrition of all the tissues. This degeneration of tissues from altered nutrition may affect every organ in the body leading to Brights Disease, acute and chronic, apoplexy, consumption in its various forms, and a general breakdown of the nervous system, followed by a long train of nervous diseases including insanity and its often termination, Dementia Paralytica. The Lunacy Commission blue book for England and Wales gives us some startling facts in regard to alcohol as a cause of insanity as shown by the records of the insane asylums during the last five years. By those records it will be seen that during that time the percentage of 21.8 for males and 9.5 for females of all admissions could be traced to alcohol, and that at the present time no less than 10,000 males and 5,800 females are in the asylums who are mentally diseased through the effect of alcohol. In Scotland the percentage is still higher, and in this country in males about the same; in females it is much less, the larger majority coming from the rural districts, including mostly the wives of poor farmers and mechanics, broken down physically by overwork, and mentally starved.

To those who look upon the intense craving for alcoholic stimulants as a disease coming only at intervals with almost irresistable force, roused into action by some nerve disturbance produced perhaps by overwork or indigestion, fail to demonstrate it as hereditary any more than consumption or insanity, in which no disease germs are transmitted, but instead physical peculiarities or idiosyncrasies of the individual calling for greater care and watchfulness of the general health, especially along those lines which affect the mental and nervous condition. Persons of a neurotic inheritance are naturally more predisposed to the use of stimulants and their effect upon them is more speedy and more easily produced than those of healthy parentage. One of the saddest cases with which we were ever brought in contact was that of an eminent clergyman in one of the most wealthy and aristocratic of our city churches, who in periods of nervous depression resorted to alcohol to such an extent, that he was obliged to leave his church and wrecked a life of great brilliancy and usefulness before he had reached its meridian. We shall never forget the look of agony and despair as we entered his room in response to an urgent call, when he fixed his blood-shot eyes upon us and uttered almost with a shriek, "It is of no use, I am doomed. My father lived upon alcohol and I sipped the cursed poison in my mother's milk." His father was one of the most distinguished statesmen of the day, and his mother a woman of rare beauty and high social qualities. In other cases there is no neurotic inheritance, but the craze for alcohol, at first perhaps prescribed by a physician or entirely voluntary as a part of social life, grows into a habit, and its constant indulgence creates a need for its use, in ever increasing doses to produce the desired effect, until it has gained such a mastery over its victim that it is very hard to resist. No one can tell the strength of this mastery until he has witnessed or experienced it. A gentleman well known in business circles said that when this wave of insanity, as he called it, came over him the desire for the stimulant was so great, that he would gratify it, if he knew, doing so it would be at the expense of his life.

Legal enactments and temperance organizations have done and are doing an immense amount of good, but something more is needed. There are cases where the strength of the law, moral suasion, and the voice of honor are powerless. The cause must be reached, the altered nutrition ever demanding more and more stimulant, checked; and the vital force permitted to assert itself. This result, it is believed, has been obtained by Dr. Isaac Oppenheimer of this city, who, through his knowledge of the physiology of the nervous system and drug action has, in years of investigation and careful study, produced an alkaloidal specific, acting upon the nerve centres, which checks within a few days the altered nutrition and all desire for alcoholic stimulant. The effect of this treatment has been so thoroughly demonstrated that in the interest of humanity a large number of prominent gentlemen, including eminent business men, bishops and clergymen of different schools, and statesmen of well known repute have gladly consented to act as an advisory board to the Oppenheimer Institute.

FREEZING FISH.

J. Parker Whitney, of the Washington State Commission, after a series of experiments, reports that fish, cold blooded as they are, can be frozen and thawed back to life if not exposed to the sun or not allowed to get more than twelve to fourteen degrees below the freezing point. If exposed to a temperature of zero they will not survive. He says that fish can be brought from the Columbia river and the Alaskan waters in a frozen condition and resuscitated in our own rivers and lakes, or carried to any part of the world under the same conditions with the same results.

An Aqueous Placebo.—A famous French physician of the second empire is said to have given the following prescription to a hypochondriac patient who worried him:

Aqua fontis	100	GM.
Illa repetita	40	GM.
Eadem stillata	12	GM.
Hydrogeni protoxyd	9.32	GM.
Nil aliud	1.25	GM.

One drop thrice daily. This elixir, it is said, cured a large number of neurotics about the court and in Parisian society. But it got the doctor into trouble at last through the indiscretion of a pharmacist. A grande dame de par le monde, as Brantome would have called her, who had taken it for years with blind faith and unfailing success and recommended it to her friends as a certain remedy for most human ailments, in an evil hour allowed herself to give way to the curiosity which proved the ruin of Eve. Consumed with eagerness to know the secret of the composition of the wonderful panacea, she submitted the document containing the mysterious formula to all the initiated whom she came across. At last she found one who revealed the fatal secret. What explanation the physician attempted is not recorded, but there can be little doubt that the outraged lady explained her attitude in language more picturesque than polite.

The Unreliability of the Microscope in the Diagnosis of Malignant Disease.—G. Hamilton Whiteford says (*Bristol Med.-Chirurg. Jour.*) that he has seen the value of the microscope repeatedly and extensively tested in the diagnosis of all the more common varieties of malignant tumor. The result has been a series of shocks to his previously firmly rooted belief, and he now holds that the microscope for purposes of differential diagnosis is perfectly unreliable. Hamilton of Aberdeen has shown microscopic sections of the tongue of persons over fifty-five years of age which present an appearance identical with that seen in epithelioma. He placed side by side with them sections of clinical epithelioma, and the most expert pathologists were unable to distinguish between the two. The author considers the naked-eye appearances and the clinical history of a case to be much more reliable than the miscroscopic appearances.

Chemical Composition of the Body.—A French chemist of a particularly inquiring turn, has determined by experiment that the body of an average man, of about eighty kilos, has all the chemical elements represented in the yolk and white of twelve hundred ordinary-sized eggs of the common hen. Properly reduced, such a body would furnish 96 cubic meters of gas and sufficient hydrogen to fill a balloon with an ascensional force of 70 kilos. Normally, the human body contains iron sufficient to make seven large nails, fat for thirteen candles, carbon for sixty-five gross of pencils, phosphorus to tip eight hundred and twenty thousand matches, together with the constitutents of twenty teaspoonfuls of salt, fifty-nine lumps of sugar and forty-two litres of water.

Compound Oxygen.—*Practical Druggist* says: "This is a gas, sold compressed in steel tubes for inhalation, by various manufacturers all over the country. There is probably no regular standard formulary or uniformity of constitutents. We are informed by an experienced manufacturer, who ought to know, that comp. oxygen as a usual thing, consists of laughing gas, largely diluted with atmospheric air. This would account for its exhilarating effects, and the fact that people who try it like it and want more of it. There is enough oxygen in atmospheric air to explain the use of this name, although it might be somewhat misleading under ordinary circumstances."

The Seton Hospital for the treatment of tuberculosis, Spuyten Duyvil Parkway, New York City, is doing excellent work in its specialty. The hospital will accommodate 200 patients. It is situated on high ground, open on all sides to sunshine and fresh pine air and, all that good air and sunshine, those great factors in the treatment of tuberculosis, with skilled medical attendance and the perfection of nursing by the Sisters of Charity can accomplish is done. The hospital richly deserves the pecuniary support of the public.

Largest Fees on Record.—One of the largest fees on record is that received by Dr. Dimsdale, an ancestor of the ex-Lord Mayor, for inoculating Catherine the Second, Empress of Russia, against smallpox, in 1762. The fee itself was $50,000, but, in addition, the fortunate physican got $10,000 for traveling expenses, with a life pension of $2,500, the title of baron, the rank of a councillor of state, and the office of physician-in-ordinary to the empress, who further graciously gave him her portrait.

In 1792, an English physician, Dr. Francis Willis, went to Lisbon to undertake the treatment of the Queen of Portugal on the following terms: Five thousand dollars per month as salary, the expenses of his journey, a table for himself and suite and $100,000 if he were successful.

The largest medical fee of which we can find record is that said to have been given to the blind physician, Dr. Gale, of Bristol, who received $250,000 from a wealthy patient, whose knee he had cured by electric treatment.

—It has recently been announced that Sir Ernest Cassel has given the sum of $200,000 for the investigation of ophthalmia and other eye diseases among the natives in Egypt. It is intended to train native medical men in the diagnosis and treatment of diseases of the eye, for only native physicians can induce poor Egyptians to learn cleanliness.

—The first annual dinner of the Royal Free Hospital and London School of Medicine for Women took place recently in the Holborn restaurant, when upwards of 400 persons sat down to dinner, the fair sex, medical and otherwise, largely predominating. Several of the speeches were made by lady officers of the school, thus introducing a novel feature in post-prandial oratory, heretofore regarded as a masculine preserve. A significant feature, as denoting the trend of masculine thought, was the presence of Sir W. S. Church, president of the Royal College of Physicians.

MISCELLANY.

—The Austrian authorities announce that the chemical treatment of tobacco by Professor Gerold's method does not free the cigars from nicotin, while the chemicals used are more or less injurious. The tests showed 0.9 to 1.17 per cent. nicotin. The Austrian standard cigars contain 1.29 to 3.99 per cent.

—An Austrian professor says that water may be sterilized in five minutes, and made both harmless and palatable, as follows: To one gallon of water add three drops of the following solution: Water 100 parts, bromide 20 parts, potassium bromide 20 parts, and then, after five minutes, add three drops of a 9 per cent. solution of ammonia.

—There is nothing new, says *Health*, in the employment of ink as a topical application. Its use as an astringent has been frequently recommended, and a Russian physician has recently experimented with it in cases of exudative erythema, local pruritus, herpes, eczema of the hands, and ulcers of the legs, using a solution containing from 3 to 10 per cent. of tannin, and from 2 to 5 per cent. of iron sulphate. He finds that it acts as a deterrent, diminishes the secretion from ulcerated surfaces, dries up vesicles, gives rise to a healthy formation of epidermis, and allays itching.

—A foreign physician has laid it down that instead of a son of a tuberculosis father being sure to have the disease, he may have in his constitution a more than ordinary amount of resistance to the germs. Instead of inheriting the disease he may possibly inherit immunity from it. The development of the contagion theory has done much to prepare our minds for the reception of immunity ideas in regard to tuberculosis. So then, instead of sitting down moping because our fathers had consumption, let us stir about and assist a possible immunity conferred on us by that very fact.

—The following story should gratify Mark Twain: The Mayor of Southwark (England), Mr. Tom Bryan, who hopes to make his year of office memorable by instituting some municipal action with regard to the prevalence of consumption, said to an interviewer the other day: "I believe in humor as a cure for consumption. 'Laugh and grow fat,' as the proverb says. Some years ago a friend of mine was very depressed because his doctor had told him his case was hopeless; and to cheer him up I lent him a copy of 'Huckleberry Finn.' He laughed over that book for weeks, and grew better; and since then he has edited a newspaper and done a lot of other hard work. I feel quite sure that Huck Finn saved his life."

—Three facts worth knowing about children are (*Calcutta Journ. of Hom.*, Jan., 1902): 1. A child cannot raise its head from the pillow before the second month. 2. A child cannot sit erect before the fifth month. 3. A child cannot walk before the tenth month, and should walk at the twelfth month. If the preceding facts could be borne in mind, and mothers instructed as to just what a child can do, and cannot do at certain periods of its early existence, then there would be less work for the orthropedic surgeon. If the young infant is allowed to sit or stand at too early an age, the superincumbent weight of the large head tends at once to exaggerate the physiological curves of the spine to a point where they may become pathological.

—Railroad men are not allowed to drink.. They fear to break this rule, for the odor of liquor would soon lead to detection. So in seeking a substitute many of them have become cocaine fiends. The stuff is easily carried concealed in their pockets and cannot be detected until the user has been for a long time addicted to it.

—According to a Philadelphia paper a Miss Death, daughter of an undertaker, was lately taken to the German Hospital in that city suffering from appendicitis. She was operated upon by Dr. F. H. Dye and placed in charge of a day and a night nurse, the former being Miss Payne, the latter Miss Grone. In spite of this gruesome combination, the patient convalesced rapidly and was soon discharged.

—A research professorship in physiology has been established at the University of California, which frees the incumbent from any obligation to teach. In addition a research laboratory, which is separated from the laboratory for students, is being put up and equipped for the needs of special as well as of general physiology. Among other things, a marine aquarium will be added to the research laboratory.

—Dr. Alfred Mayer (N. Y. State Med... Soc.) said that for poor patients, unable to get away from the city, the fire escapes of tenement houses proved an excellent place to recommend to consumptives. Practitioners among the poor must not forget this means of keeping patients constantly in the open air, which is, after all, the main feature of the modern treatment of tuberculosis.

—It has recently been asserted by a scientist that examinations of the eyes indoors is no test of their actual capacity, and that all examinations of the eyes of school children should be made in the open air, as otherwise there can be no true standards. He states that the superior visual acuity of Indians and other savages is due to the necessity of concentrating their attention on objects on which their food and safety depend, and proves his assertions by statistics —many new and personal—which demonstrate that the out-of-door eyseight of civilized peoples averages as high as that of the uncivilized. He concludes that any one can make his eyesight equal to that of a savage by concentrating his attention sufficiently. He adds a plea for more out-of-door life for children, even at the expense of their studies.

—The *Indian Lancet* for August 25, 1902, says that it has remained for an Italian woman to break all maternity records. She has, in the course of nineteen years of wedlock, become the mother of sixty-two children. This extraordinary statement is vouched for by many credible witnesses, who testify to its truth in a petition now before the Italian Government, asking for the woman a yearly pension of $360. Of these children fifty-nine are boys and three girls. Eleven times in succession, in nine years, the prolific female gave birth to triplets, three times four boys arrived at one birth, and once five boys and a girl. The other twelve were born singly, but very close together. The woman is a native of Nocera, a little village near Naples, and at fifty-seven is, of course, almost incapable of gaining her livelihood.

ORIGINAL ARTICLES.

MALARIAL FEVERS.

BY W. C. COLE, M. D., JACKSONVILLE, ILL.

MALARIAL fever has occupied an uppermost place in the medical mind from the earliest ages of which we have any record. Perhaps not always under the name of malarial fever, but under other names meaning the same thing, i. e., miasmastic fever, marshmiasm, swamp fever, chills and fever, fever and ague, etc., or by a name given on account of some peculiar symptom as intermittent fever, remittent fever, bilious fever, congestive fever, etc.

During all the ages, up to within a comparatively short time, little was known of its true cause, and not much more known of the remedies of a curative value. True, the cinchona bark has been known as an antidote to malarial poisoning for something over two hundred years, though this knowledge was not general for nearly so long a time, and faith in its healing properties seemed slow to spread, hence its great benefits and power to relieve malarial troubles were not known until comparatively recent times.

It is astounding to think of all that has been written and said on the subject of malaria during the perhaps thousands of years, and all on the same lines, the same theorizing and resulting in about one and the same conclusions, i. e., that malaria is a mysterious "miasm;" that it infects certain localities, and these localities easily defined are most accurately mapped out in the different countries or in the different sections of the same country.

Our immediate predecessors of only thirty years ago theorized and argued, and it was interesting to hear them, along the same lines as did their great-grandfathers. They explained how that the malaria would attack one who visited the river bottoms in the late summer or fall, how that the miasm was found in the low places, over stagnant water, over the newly-turned soil, and in places where there was profuse vegetable decay; also how that one should live on the high places and venture into the low places, as river and creek bottoms, only during the middle or warm part of the day.

They told us also how that quinine was the sine qua non in all acute cases, and arsenic, iron and blue mass in the chronic. Facts learned empirically, and not improved on up to the present time. They explained many facts learned by observation, and experience, relative to means of cure and means of prevention. They approached so near to the true cause and prevention of malaria as we understand it to-day that we are led to feel "there were giants in those days."

It is only twenty years since Laveran announced his discovery of the malarial parasite, and less than four years since Manson and Ross first published to the world their findings of what part the pesky mosquito plays in the role of causative agent.

We seem appalled at the fact of the nearness to the true cause, as we find it to-day, that the profession has been, for, lo, these many generations, and all at once, as it were, the truth is revealed, the discovery made that the cause of malarial fever is not a mysterious miasm floating in the air we breathe or in the water we drink, but a real tangible entity, a parasite conveyed by and through the mosquito. Centuries ago the native Africans believed that mosquitoes produced fever. True, it has not been proven that the parasite of malaria may not be conveyed through the air, or even by means of water, yet investigators along these lines discredit the idea of the poison being conveyed through the air, and many question the theory of conveyance by water, but all are unanimous in the belief that the mosquito is the chief means, if not the only means, of infection. This fact has been demonstrated over and over again by investigation in various parts of the world.

Following and confirming Laveran's work, first comes Richard, of Algiers; later, Marchiafava and Celli; still later, Golgi. He (Golgi) proved the relation existing between the different stages of the malarial paroxysm and the cycle of development of the parasite. The same observer first recognized two special varieties of the parasite as belonging each to quartan and tertian fever. While still later, but very soon after, Marchiafava and Celli recognized particular forms associated with the aestivo-autumnal fever. In this country Sternberg, Osler, Counselmann, Thayer and others have added much to our knowledge of the subject.

Beginning with the mosquito, they have isolated and described the malarial varieties so accurately that a novice may recognize it at once. For instance, they tell us that it has spots on its wings; the innocent variety have plain wings; that these spots are four in number and arranged in the form of the capital letter T; that it has a bass voice; the harmless kind have a tenor voice; that it occupies a certain position when resting on the wall, different from the innocent variety; it seems to stand on its back, at is were; that the projections on either side of the beak are longer, nearly as long as the beak, in the malarial variety, whereas in the harmless variety they are short.

Also, the eggs of the malarial mosquito are laid singly on the water, while those of the harmless mosquito are laid in a raft-shaped mass. The larvae of the malarial mosquito floats on the surface of water, its body being horizontal with the surface, that of the innocent variety hangs down perpendicularly and is commonly found in small, stagnant pools or barrels of water, and is familiarly known as the wiggler. The parasites are small, colorless and almost transparent amoeboid bodies, eight to nine inches in length, by about three inches in diameter. In a later stage of development, small, rounded, pigment granules appear in them. At first these granules have no seeming regular arrangement, but appear scattered around the periphery of the organism; later, they collect in the center of the parasite, and finally are found free in the serum.

Three varieties of malarial parasites have been described, and the differences in appearance and development have been pointed out, each of which passes through a cycle of development which in its general characteristics is common to all. The cycle of development varies in duration from twenty-four to forty-eight and seventy-two hours, according to the variety of parasite.

As the parasite reaches maturity, it becomes quiet, and, according to the variety, it fills or partially fills the red blood cell. Changes in the corpuscle holding

the parasite occur coincidentally with the various stages of development of the parasite. These changes consist chiefly in variation of shape and color.

The parasite having reached maturity, the granules begin to separate into groups, or begin to divide, and the process of segmentation commences. When completed, the process divides the parasite into a number of oval bodies or spores, while the corpuscle, which has acted as a host, bursts, and the subdivisions of the parasite or spores are set free, the pigment granules remaining behind to float free in the blood serum, to be taken care of by the process of phagocytosis. The spores thus set free very soon enter fresh corpuscles, and there begin the cycle of development anew.

The quartan parasite reaches its full development in seventy-two hours, and shows more regularity in its evolution than any other variety. It completes its development in the circulatory blood, whereas the tertian and the aestivo-autumnal varieties complete their development in the viscera and bone marrow. (Mainly the spleen and liver.) Their manner of formation, arrangement, etc., I will not attempt to describe, but refer you to the writings of the investigators who have made these discoveries, and who have given us not only graphic pen pictures, but numerous photographs as well.

The diagnosis of malarial fever has heretofore been a matter of difficulty and guessing. In mild, uncomplicated cases the clinical symptoms backed by the use of quinine were usually sufficient to make out the case, but in complicated cases, in cases of mixed infection, or in chronic cases, there has always been difficulty and doubt.

Now, however, it is a very different and a very simple matter. If there be any doubt, all that is necessary to clear up the doubt is to place a drop of blood taken from the sick patient under the microscope, and if the plasmodium malariae is found, the case is one of malarial fever, so that, with our present knowledge of the subject, the physician who neglects the use of this simple means in all complicated or doubtful cases is derelict in his duty.

Technique in the use of microscope, an acquaintance with the things being looked for as well as the things looked for that are calculated to lead one astray, are important matters to attend to, but for these we refer you to text books on the subject.

As to treatment, it is conceded by all good authorities that in quinine we have a specific. This, in fact, was quite generally agreed to before the discovery of the malarial parasite, but since that discovery the action of quinine on the parasite in its various stages of development has been observed and pointed out by numerous investigators, who tell us that quinine has most effect for destroying the parasites when they are young, when extra-corpuscular, and least effect when they are still within the corpuscle. Therefore, the administration of quinine a few hours before an expected paroxysm will not prevent its occurrence, because at this time the parasites are within the corpuscles, and at a stage in their cycle of development when they are least acted on by the drug. Quinine should, therefore, be given so as to get its maximum effect at the time of sporulation of the parasites. It seems immaterial what salt of quinine is used, though it is important to have it in solution, rather than in pill or tablet form, if we would be sure of getting its effect, since it is no unusual thing to have the pills or tablets pass through the entire length of the alimentary canal without being dissolved.

Knowing the parasite, and having in our possession the means that will destroy it, or at least render it powerless to do harm, the cure of malarial fever would seem a very simple matter, and in the vast majority of cases this is true, but, notwithstanding these facts, the remedy (quinine), while it has the power to destroy all forms of malarial infection, it is useless against the toxin produced by the plasmodium. It is useless in many chronic cases, and in cases known as malarial cachexia and malarial anemia, and in hemoglobinuria. Then, too, there are cases in which, for various reasons, the remedy cannot be used, and we are compelled to fall back on our resources and resort to substitutes. So we find the treatment is not such a simple matter after all.

Of the substitutes we will enumerate only a few. They are arsenic, strychnine, iodine, the milder preparation of the cinchona, willow bark, dogwood bark; in fact, most of the bitter barks, methylen blue, and, last, but not least, salo-quinine, a preparation of salicylic acid and quinine. It is said to have several advantages over quinine, chief of which are its tastelessness, freedom from irritating action upon the digestive apparatus, and toxic effects upon the nervous system, such as tinnitus, deafness, headache. Besides, it has been shown to be more potent in the relief of malarial fever than quinine, curing some cases that quinine failed to cure.

COLLES FRACTURE.*

BY F. D. CARTWRIGHT, M. D., BOWLING GREEN, KY.

FRACTURE of the lower end of the radius is one of the most common of all fractures which the surgeon is called upon to treat. Owing to the frequency of its occurrence and the importance of successful treatment, it received a large amount of attention in our medical journals and text books.

To trace the history of our knowledge of this fracture is quite interesting.

The surgeon, Abraham Colles of Dublin, first called special attention to these injuries and their distinctive features in the year 1814. As he described it, the fracture takes place about an inch and a half above the carpal end of the bone, being generally oblique in character. At present Colles' name is applied to the majority of all fractures of the radius close to the wrist joint.

Many attempts have been made to classify these different fractures, none of them being generally accepted. The lines of breakage are almost infinitely various, so also may be the damage to the soft parts, that for practical purposes such classifications are useless. It has been recently said that considering the knowledge we now possess of the different lesions it is as easy and simple a task to describe each one as it is to classify them in groups.

In the most common forms of this fracture, "the hand falls to the radial side and seems to carry the lower fragment with it, the lower end of the ulna becomes unnaturally prominent, and to the ulna side." "There is a backward displacement of the lower fragment with ascent of the radial styloid by crushing, and of the posterior articular border of the

radius by tilting or angular displacement, so that the articular surface looks downward and backward instead of downward and forward."

A vast majority of the cases are produced by a fall upon the palm of the outstretched hand. The peculiar mechanism of the wrist-joint, the intimate manner in which the radius is articulated with the scaphoid and semi-lunar bones serves to directly communicate any severe shock to the radius, which may be received by the palm of the hand. Occasionally, though much more rarely, the fracture may be caused by a fall upon the back of the hand, or by direct violence. Fracture from these causes does not often occur, because of the infrequency of falls on the back of the hand, and also of the anatomical relations which exist, the posterior lip of the radial articular extremity not projecting over as the anterior lip does.

The large amount of spongy substance in the inferior extremity of this bone and its subsequent rarification in adults makes them more susceptible to the accident than the young.

Among the fractures, which may be taken as typical, one of the most general and conspicuous symptoms is the peculiar deformity of the wrist and the position of the hand, resembling to some extent a dislocation. Formerly dislocations of the wrist joint were thought to be frequent, and several different forms were described; we now know that with exceedingly rare exceptions they were fractures.

Velpeau first noted the resemblance of this peculiar deformity to the back of a silver fork, this comparison was such an apt one that it has survived, and is mentioned in connection with the lesion almost as often as is Colles' name. This deformity together with the loss of function and attendant pain offers strong evidence as to the nature of the injury. To those surgeons who have ready access to the X-ray, the diagnosis of this fracture even in its most obscure form is simple and positive, there is no longer doubt as to the extent of the fracture, though cases of impaction cannot be detected by the skiagraph.

Frederick J. Cotton, of Boston, in a paper published in the Annals of Surgery a year or two ago, after a special study of this fracture makes these statements: "There is no single form of lesion described from an actual specimen, and which is susceptible of demonstration in the shadow picture, that has not been so demonstrated in one or more clinical cases, nor has the X-ray discovered any previously undescribed lesion."

With the aid of the X-ray the diagnosis, reduction and subsequent treatment of these fractures are greatly simplified, but at present the vast majority of doctors have not the advantages of the X-ray, and their diagnosis is determined upon their knowledge of the presenting symptoms, and the intelligent and correct answers of the patient.

The line of fracture is usually transverse and situated from one-third of an inch to one inch of the articular edge. The deformity is caused by the lower fragment of the radius together with the carpus being displaced upward and backward by the extensor muscles of the thumb, and the lower extremity of the upper fragment projecting on the palmar aspect of the forearm. When the lower fragment is displaced upward and backward, the styloid process is crushed and pushed upward, the posterior articular border by tilting or angular displacement causes the articular surface to look downward and backward instead of downward and forward.

The ulna is usually dislocated forward though it may be fractured low down, fracture of its styloid is common from the pull exerted on it by the lateral ligament and the marked abduction of the hand at the moment the breaking force is exerted. A transverse fracture of the scaphoid bone may occur.

Impaction occurs to some extent in the majority of cases. Displacement backward and outward almost always takes place, though there may be no displacement. The damage to the soft parts may be extensive, the ligaments are violently stretched, lacerated and frequently ruptured, the synovial sacs of the articulation may be lacerated, the flexor tendons may be torn by the projecting edges of the upper fragment, anteriorly, the periosteum may be stripped up by the lower fragment.

Many fractures of considerable extent may not be recognized without the agency of the X-rays, and many surgeons refuse to take a case unless allowed the privilege of an X-ray examination. With the aid of the X-ray the diagnosis is quickly and easily made. Many fractures without great displacement and regarded as simple sprains are recognized and deformity prevented by the institution of proper treatment.

When we have to make our diagnosis without this valuable assistance one of our chief reliances will be found in the characteristic deformity. Careful palpation in those cases, in which the deformity is slight, will usually enable us to recognize the presence of the abnormal relations existing, the anterior lip of the articular surface of the radius does not project over the carpus and its posterior articular lip is found pushed backward, making an abnormal elevation on the wrist. The radial styloid being crushed is pushed upward until it is on a level or above the ulnar styloid.

Special tenderness at the base of either styloid is a symptom of fracture. Upon inspection forward displacement of the head of the ulna may be readily recognized. Abnormal mobility and crepitation are not to be relied upon as constant symptoms because of the frequency of their absence due to impaction, the position the fragments are forced to occupy, and the remaining untorn ligaments. In any instance where there is loss of function and the swelling is severe enough to prevent a diagnosis by palpation, we are warranted in supposing the presence of fracture, and treating the case accordingly. It should be the invariable rule, when possible, to use the X-rays upon all cases of wrist-joint injury which comes under our observation, when there is the slightest doubt as to the extent of the damage; many cases of deformity would thus be prevented by the recognition and treatment of unsuspected fractures.

A good result will almost always be obtained when there is accurate primary reposition of the fragments, with their subsequent retention in this position by proper dressing and attention, though there are many cases where the extent of impaction and injury to the joint and soft parts is so great that a good result is not to be had by any form of treatment.

The first indication to be met in the treatment of fracture of the lower end of the radius is reduction, this in ordinary cases can usually be accomplished without great difficulty. The surgeon grasping the

hand of the patient places it in dorsal flexion with adduction at the same time making extension with counter-extension at the patient's elbow. By pressure upon the upper fragment and firm pressure with the thumbs and with traction backward, forward and laterally, reduction may be accomplished.

The chief difficulty to be met with in reducing the fracture is impaction; untorn ligaments may also occasion some trouble by having a tendency to hold the fragments in their newly acquired position. On account of these obstacles it is often necessary to use considerable force before a satisfactory position of the fragments can be obtained; this necessitates the administration of an anesthetic. The assistance of the X-ray is here probably more valuable than in making the diagnosis, we are enabled to know the position of the fragments, to know just where to apply force, less damage is done to the soft parts, the patient subjected to less pain and a better final result to be had.

As to the selection of a suitable dressing: There have been various forms of splints devised, many of them owing their existence to unsupported theories others while being constructed on correct principles were too elaborate and complicated to be of practical use, hence giving no satisfaction. While many surgeons to-day prefer a plaster of Paris dressing, the great majority are using either the straight splints of wood, wood-fibre, gummed felting, or some such easily procured cheap and adaptable material, or a pistol-shaped splint, or some modification of it which permits of adduction with palmar flexion.

The application of plaster of Paris splints is without doubt a scientific method of treatment as they are moulded to the shape of the limb, and deserves favorable mention and consideration, but other splints are productive of as good results, are much more easily obtained and are as inexpensive. No dressing should be used which may not be easily and quickly removed. In using the straight splints, the posterior splint should extend from the head of the metacarpal bones to a little above the middle of the forearm, the anterior splint also extends from the head of the metacarpal bones to a little above the forearm, a place being cut out of the anterior splint at the eminence of the thumb. Thus the fingers are freely movable, while care should be taken that the splints are not too wide and that they be sufficiently and smoothly padded. If necessary additional pads should be placed over the fragments both anteriorly and posteriorly to assist in the better retention of reduction.

The splints are held in place by adhesive strips and a roller bandage, care being taken that they are not too tight, especially is this to be avoided during the first few days of treatment, otherwise swelling with considerable pain sometimes followed by gangrene, is liable to occur.

The forearm and hand held in position of semipronation should be supported in a carefully adjusted sling. The sling should not owe its support to being pinned to the clothing, but should pass around the back part of the neck, crossed in front, ample enough and so adjusted as to receive the whole weight of the arm. The arm should be examined within twenty-four hours after the first dressing is applied; if necessary the dressing should be removed and reapplied. If possible the fracture should be examined with the X-rays immediately after the application of the first dressing and thereafter every day for about a week, should the fragments slip they should immediately be replaced and the necessary modifications made in the dressing to prevent its recurrence. From the third or fourth day the thumb and fingers should be frequently flexed. After the first week the splints may be removed as often as the third day, gentle massage and movement of the wrist begun; by the end of the third week the splints may be entirely removed but it is best then to apply some sort of a small supportive dressing over the seat of the fracture, and still use a sling for several days longer.

Unless extensive damage has taken place to the lower end of the radius so as to prevent complete reduction of the fragments a functionally useful wrist with little deformity should result. The most usual deformity resulting is a widening of the wrist and a permanent slumping forward of the ulna. In the elderly on account of extensive impaction and adhesions the result may be very unsatisfactory. The pistol-shaped splint or some modification of this position is frequently used and has many practical and theoretical points in its favor. By adduction of the hand we bring the radius more prominently into view and hence can more easily bring about reduction and judge more accurately the extent of the replacement of the fragments. The tendency of the fractured radius is to shorten, and by this position we maintain extension, at the same time to some extent replacing the dislocation of the ulna. A recent modification of this position is one of adduction with palmar flexion. A straight dorsal splint is used extending from the second phalanx to the upper third of the forearm, by the aid of a roller bandage the hand is held in the above-mentioned position, which is quite similar to that obtained by the use of the Levis metallic splint.

This latter method of treatment is very similar to that advocated recently in Europe, which consists in the reduction of the fracture by complete flexion of the wrist and the maintaining of this position by the use of a metallic splint also closely resembling the Levis splint.

UTERINE CURETTAGE: ITS INDICATIONS AND TECHNIQUE.*

By W. G. Birchett, M. D., Owenton, Ky.

IN presenting a paper on the subject of uterine curettage for consideration, it will not be my purpose to suggest any new methods or devices for the performance of this well-known surgical procedure, nor in the time allotted can I hope to cover more than a limited area of the extensive field it occupies in operative gynecology. My chief object will be to cite some of the most important indications for curettage and outline certain conditions in which it has especial advantage and utility; for properly and skilfully applied under thoroughly aseptic precautions it is a method of treatment which will oftentimes reach the seat of pathological processes and exemplify its efficiency when other methods have signally failed.

The curette is and has been greatly abused by unskilled operators and inexperienced diagnosticians, and cases must be carefully selected for its application. There are many contraindications to the use

of this valuable instrument. Unquestionably many women have paid the penalty for the use of an infected curette, and uteri in which no organism had ever prevailed have become the hotbed of septic infection.

As simple as the surgical procedure may appear, nevertheless the same surgical skill and aseptic technique are required in its performance as obtain in major operations, and the operator and his assistant must be thoroughly conscientious in all details of asepsis and antisepsis. Improperly selected cases not only may not be benefited by the use of the curette, but the damage produced thereby may be irreparable.

Recamier in 1843 devised the sharp curette, but it was reserved for the eminent Thomas to originate the dull instrument and suggest information to be derived from its use; but their views met with much opposition from such men as Scanzoni and Chassagnac who pronounced the procedure (as Palmer has stated) unscientific and barbarous.

Simon advocated the use of the curette and in 1872 devised one of his own (a spoon); he was followed by Sims, who created a sharp curette with cutting edges—a dangerous instrument, particularly in unskilled hands.

Emmett was so severe in his denunciation of Sims' curette as to remark that the ingenuity of man had never devised an instrument capable of doing more harm. This was doubtless true, nevertheless it today holds an important position in uterine treatment, and as Palmer has stated "it has a place and power."

Indications for the application of the curette are conspicuous to every physician, but it is to those conditions in which it is especially adapted that this brief summary refers:

INDICATIONS.

(1) The curette as a diagnostic agent: Through its agency we have a valuable means of acquiring information in regard to the uterine cavity, the condition of its mucosa, etc. The dull curette probably serves better for this purpose, but the sharp instrument has therapeutic value which the dull cannot fulfill.

The indications in general for its use are: (a) Uterine hemorrhage; (b) Profuse leucorrhea; (c) Intra-uterine growths and degenerations, when these conditions do not yield to local treatment. In the case of any discharge from the uterus—hemorrhagic, serous or purulent—which resists local medication, we are at times led to an accurate conclusion as to existing pathological conditions by the use of the curette. It may impart a sensation of roughness, smoothness, inequality, or audible grating sound, sufficient to make a diagnosis even before the scraping is submitted to a microscopical examination.

(2) Uterine fungosities: Palmer has said that in the treatment of these conditions constitutional medication is not of much avail; cauterization is uncertain and unsatisfactory; strong caustics may destroy the vegetations, but there is danger of repeated cauterizations resulting in the formation of hard cicatricial mucous membrane; whereas the curette is less painful, more rapid, safer, more convenient, and more effectual.

(3) Undeveloped uterus: A condition seen in young girls with some constitutional dyscrasia; in those who lead sedentary lives (in the better classes); in those who are overworked; where exercise is a novelty; when menstruation begins late in life, associated with dysmenorrhea and scanty flow, later to be followed by menorrhagia. In such instances, according to Bonnifield nothing is of more value or brings more relief to the patient and satisfaction to the physician than simple dilatation of the cervix associated with constitutional and general treatment, curettage and packing as presently to be described. In these cases curettage may have to be repeated in six months.

(4) Procidentia: Even in the first and third degree scraping the uterine cavity is of decided value. In these conditions where there is always more or less endometritis, our object is threefold, viz., to investigate the supports of the organ above and below, and reduce its weight. We repair the supports above by a ventro-suspension or ventrofixation; below by a colporrhaphy,—anterior or posterior, or both; we reduce the weight of the uterus by hot vaginal injections, plain or boro-glyceride, by tampons, curettage, trachelorrhaphy, or amputation of the cervix if necessary. Curettage not only reduces the weight of the organ, but relieves the existing endometritis, and is of inestimable value.

(5) Incomplete abortion and septicemia: Here the value of the curette is incontestible. After abortion, for the removal of portions of retained placenta or fetal membranes which cannot be reached by the finger or grasped by placenta forceps, it is a valuable adjunct to the obstetrical armamentarium. In septicemia, where the condition does not yield to antiseptic douches and internal treatment, the sharp curette will oftentimes bring the disease to a speedy and favorable close, even when the patient appears beyond all surgical and medical aid. However, curettage should only be advocated in the worst cases; the curette is indicated only when other means have proved futile. It is also a dangerous instrument for use after labor; many cases where secundines and fetal remnants are allowed to remain in utero take care of themselves without curettage or other interference on the part of the physician.

(6) Lacerations of the cervix: Montgomery has seen good results from curettage in cases where objections were raised to a trachelorrhaphy, and in the preliminary treatment where there was a glairy mucous discharge, in order that medicinal applications might reach the seat of the disease.

(7) Carcinoma of the uterus: In the early stages it will assist in controlling hemorrhage, relieve hypermetrophic endometritis, and limit the progress of the cancer until more radical measures may be undertaken; and finally as a palliative measure when all hopes and resources have been exhausted, when hemorrhages appear frequently and copiously, it assists in prolonging inevitable dissolution.

(8) Uterine fibroids: Curettage arrests hemorrhage and relieves hypermetrophic endometritis for an indefinite period; it is especially valuable at the menopause. If one cannot operate, and where repeated hemorrhages have almost exsanguinated the patient by curettage and intra-uterine tamponnade the patient may be restored to a condition favorable for more radical operation. The same statements apply to myomatous conditions of the uterus.

(9) Endometritis—atrophic, hypermetrophic, septic, specific—where dysmenorrhea and leucorrhea are prominent symptoms: Doctor H. J. Boldt believes

the curette is especially valuable in acute cases, but for the chronic forms intra-uterine applications are necessary.

(10) Sterility: The curette is sometimes used for relief of this condition. And lately Doctor J. Riddle Goffe has recommended its use, associated with anterior vaginal section, to reach existing pathological conditions.

(11) In chronic cervical endometritis, for the removal of hypertrophied cervical glands, and glandular degenerations around the os, the curette is invaluable.

(12) As a preliminary measure to operations of more importance and consequence, in working upon the supports of the uterus, as shortening, or to correct deviations or displacements, or operations of still greater magnitude, it is usually prudent, a valuable adjunct, and conservative surgery, to curette the uterus as a primary procedure.

TECHNIQUE.

However simple the procedure of curettage may seem, the astute and well-trained physician will always be on the alert, and he who would be assured of the greatest success must proceed with a definite anatomical knowledge of the structures involved, what is to be accomplished by his operation, and be governed by strict rules of asepsis; anything else would be rash and reprehensible.

The patient should be prepared in the same manner as for an abdominal section or other serious operation. On the evening previous to the appointed day, the genitals should be shaved and scrubbed with green soap and bichloride solution followed by a copious douche of bichloride, after which an antiseptic gauze pad (wet with bichloride solution) should be applied to the vulva with a "T" bandage to maintain it in position. On the succeeding morning, the time for the operation having arrived, everything being in readiness—sterilized instruments, water and gauze, the patient having been anesthetized, the hands of operator and assistants sterilized, the operation is commenced. Have an assistant remove the "T" bandage and pad, draw the patient well to the edge of the bed or operating table, insert underneath the buttocks a Kelly pad or piece of rubber sheeting, and place the patient in the lithotomy or Sims' position. The operator should then again thoroughly bathe the external genitals and wash out the vagina with green soap followed by a douche as already outlined. The operator now resumes his seat at the foot of the table facing the patient (if he prefers this position), inserts a small Sims' speculum in the front of the vagina (the assistant taking it from his hands) and a large Sims' speculum is inserted on the roof of the vaginal canal (which usually retains its position) to be steadied and guided by the operator to suit his convenience. With a volsellum forceps he grasps the cervix and pulls the uterus well down into the vagina, holding it in that position. The cervix is sterilized by repeated moppings with gauze or cotton dipped in bichloride solution, and the operator is then ready to begin to dilate with the smallest sized metallic dilator, using gentle force and inserting a larger size on each application until the os is dilated sufficiently to use a more powerful instrument. He may now proceed with a Palmer or Goodell dilator to complete the process, and this is one of the most critical points of the operation. If the surgeon is not skilled in the use of the Goodell dilator he should be extremely cautious as it is a powerful and formidable instrument with which one might easily split the cervix through and through. However, the cervix should be dilated sufficiently for the operator to carry on his manipulations and secure good drainage. He is now ready for the curette, either the sharp or the dull, or the douche-curette (which is also valuable) as preferred and as is the custom of the operator. I think the sharp instrument is better for the removal of diseased processes. Hand the volsellum forceps to the assistant who makes traction directly upward over the pubes, which causes the os to dilate more thoroughly and uniformly. Steady the large Sims' speculum with the left hand and use the curette with the right. Insert the curette in the middle line of the body up to the fundus of the anterior wall of the uterus and begin by slow and general sweeps to remove the endometrium. The amount of force to be exerted can only be ascertained by experience. Bring the curette by successive sweeps around the body of the uterus until it is again in the median line, and by this means the whole circumference of the organ is covered. Reach for the cornua and gently scrape each and bring as much of the debris as possible without the os. The manipulations must be very gentle, as it is needless to indicate the disastrous results which may follow the undue force of this instrument.

The curettage is now practically completed, but there are a few other details to be borne in mind which are of importance. The assistant, still holding the volsellum and small Sims' speculum, the operator should mop out the uterine cavity several times with moist bichloride gauze. After this he should pack gauze or cotton around the cervix for its protection (as well as the vagina) and is now ready for intra-uterine medication, be that what it may. For ordinary cases iodized phenol is preferred, and should be applied to the entire endometrium. When passing this substance on a probe through the vagina, have the assistant turn on a stream of sterilized water lest you corrode the vaginal structures. Remove the packing around the cervix and you are ready to complete the procedure by inserting the proper quantity of gauze into the uterine cavity to secure adequate drainage. By the bimanual method the operator replaces the uterus in its normal position, and the vagina is washed and a tampon (plain or boroglyceride) inserted up to the cervix, followed by replacement of the "T" bandage.

The gauze packing should be left in the uterus for twenty-four to seventy-two hours, and if possible allow the uterus to expel it into the vagina, if not it of course must be removed.

Pain may be controlled by ice bags, chloral, codeine or, if severe, by the administration of morphine, the patient remaining in bed from seven to fourteen days. Afterward a few douches of lysol or creolin will be all that is necessary.

In conclusion I wish to emphasize that uterine curettage is a major operation and should always be classified as such; it should not be considered as a trivial affair, but should be executed with the utmost and absolute aseptic precautions and the technical skill natural to the genius of the successful operator.

The foregoing is substantially a rehearsal of the method of uterine curettage as taught and practised by Professor Bonnifield in his clinic, and because of

its simplicity in detail can be borne in mind and practised by the average medical practitioner.

Uterine curettage is certainly a valuable adjunct to gynecological therapeutics, and the skillful operator and experienced diagnostician who applies it in properly selected cases should accord it a place among the most valuable resorces for relief of uterine affections such as those to which attention has been called.

JOTTINGS FROM MY NOTE BOOK.

WM. WORMLEY, M. D.

TO the general practitioner the nervous manifestations of typhoid fever are interesting and important. Delirium is more common in severe cases and is to that extent an unfavorable indication. Further, the greater the delirium, the greater the danger of life, while the mortality with light delirium is less than 20 per cent. In cases of severe delirium it reaches over 50 per cent., and when the delirium is complicated with sopor to almost 70 per cent. The mortality of initial delirium is high, being more than 30 per cent., and that of delirium occurring during the first week of the fever is over 40 per cent. The value of delirium in prognosis consists in the fact that it is to some extent, according to the author, a measure of the gravity of the infection. As to the restoration to mental health, about one-third of the cases get well within a week, while in one-fourth the mental disorder continues for months and years, and in one-half of the latter class it becomes permanent. The prognosis is more favorable in febrile than in post-febrile. Of the former more than one-half get well within a week, while less than 7 per cent. are incurable; of the latter, however, only one-sixth get well within a week, while 20 per cent. are incurable. In many cases of typhoid, even after complete convalescence, a weakened condition of the nervous system remains which predisposes to future nervous diseases. The necessary treatment is mainly that required by the typhoid fever itself and the systemic conditions present.

The most important question outside of the use of the X-ray and Finsen's apparatus now is, whether we stand in a position through operative measures to cure carcinoma. Speaking with strict scientific accuracy, "cure" would mean that after a long series of years not only would there be not the slightest return of the disease at the seat of operation, but also none elsewhere, as metastatic or glandular carcinoma. Practically, however, for both the surgeon and the patient "temporary" cure is an important question. If the latter can be freed from a painful disease two, three, or four years and his life prolonged for a portion of that time, an important service is rendered him. At the Gottingen Clinic, of 66 cases of return of the disease after operations for cancer of the breast, nearly half recurred during the first six months. Of the remaining 14, to return occurred in 7 at the end of the second year; in 4 at the end of the third year; in 2 during the fourth year; and in 1 as late as ten and a half years.

Of 77 cancers of the rectum, 60 were operated upon by removal of the diseased bowel; 16 with extirpation of the anus and a portion of the rectum; 44 with resection of the rectum but retention of the anus. The peritoneum was opened 15 times, but in only one case did suppurative peritonitis result. Much importance was attached to the preliminary preparation of the patient by diet, emptying the bowels, etc. Eighteen per cent. of the patients remained cured for more than two years. Of 4 patients upon whom extirpation was practised, 1 had a stricture; not one had continence of feces. Of 17 operated on by resection 2 had stricture; 9 incontinence; 6 were able to retain the feces. Konig thinks these results not very encouraging, and recommends colotomy as a palliative measure in cases of rectal cancer that cannot be operated upon.

While it is unquestionably desirable to begin mercurial treatment in syphilis at the earliest proper moment, and while that treatment undoubtedly either suppresses or renders milder the subsequent secondary manifestations, and while there is every reason to believe that in this way the liability to later or tertiary lesions is somewhat lessened, nevertheless, the sum total of these advantages does not warrant the employment of mercury before the diagnosis of constitutional disease is absolutely assured. While in many cases that diagnosis can be made with a high degree of probability from the appearance of the primary sore alone, yet it cannot be said that all possibility of error is excluded until some general symptom, such as the enlargement of distant lymphatic glands, has shown itself.

The administration of mercury during the existence of the primary sore, unaccompanied by general symptoms, for the purpose of suppressing or "aborting" syphilis, is not, therefore, justifiable, unless the diagnosis can be confirmed, or unless there are urgent and unquestionable reasons for securing rapid cicatrization of the chancre.

It is proper to employ cauterization or excision according to the site of the chancre, in cases in which it is seen very soon after appearance, and especially when it is known to have followed intercourse with a syphilitic person. The chances of preventing constitutional infection in this way, while very slight, may yet be considered sufficient in such cases to counterbalance the disadvantages of the method, such as pain, swelling, the production of phimosis or suppurating bubo, and the obscuring of the diagnosis by the resulting inflammatory exudation.

Aseptic or antiseptic measures, while harmless, cannot be considered especially indicated in the local treatment of chancre, and can, in all probability, have no true abortive influence. The local use of mercurials, hypodermatically or by inunctions, is perhaps worth a trial, but it is probably inferior to the more radical methods, based essentially upon the same principles, namely, excision and cauterization.

I note that Bishop, from the statistics of the causes of the diseases of the ear, treated during eight years in the Illinois Charitable Eye and Ear Infirmary, has drawn the following conclusions:

1. Youth is a predisposing cause; more than one-fourth of the whole number of cases were under fifteen years of age.

2. Sex does not exercise any appreciable effect in the disease.

3. About eighty per centum were chronic diseases, and about ninety per centum were diseases of the middle ear.

4. The causes of nasopharyngeal catarrh are the proximate causes of middle ear diseases.

5. The nervous temperament was predominant.

An interesting case of arterial thrombosis following influenza has been reported by Leyden in the case of a girl twenty years old, in which, four weeks after an attack of influenza that kept the patient in bed for a week, a suppurating angina appeared. A week later, in the morning on arising, she felt a sharp pain in the left hand, which toward evening was observed to be pale. In the course of a few days, the pallor had given way to cyanosis, with which was associated a sense of coldness and weakness. The discoloration extended to the forearm and to the lower third of the arm, and swelling became superadded. There was some pain and some retardation and enfeeblement of movement. There appeared to be slight hyperaesthesia. It was found that the left radial pulse was absent at the wrist; neither could pulsation be felt below the middle third of the arm; while below, a cord-like mass could be made out. On physical examination no lesion of any organ could be detected. The urine contained neither albumin nor sugar. There was an absence of febrile symptoms The family and personal history was good. For several days the thrombosis extended and the symptoms became more pronounced; but subsequently the conditions moderated, until perfect recovery finally ensued, the occlusion of the brachial artery, however, persisting and a collateral circulation being established.

A second case is reported as having occurred in a medical man fifty years old. Shortly after an attack of influenza, symptoms of occlusion of the popliteal artery appeared, for the relief of which amputation became necessary. After a protracted convalescence, retarded by numerous complications, the patient ultimately recovered. In this case also there was no cardiac lesion, and the family and personal history was good.

Leyden is unwilling to admit that these two cases are instances of marantic thrombi. He would prefer to believe that the condition is to be associated with a breaking down of the colorless blood corpuscles that takes place during the febrile stage of the disease and later.

In the study of the chemical diagnosis of gastric cancer Rosenbach has opposed the views of Riegel some time ago, and his later experience has but strengthened the opinions he then expressed. He does not consider the reaction for free acid (hydrochloric) of any importance in the diagnosis of gastric cancer. In five undoubted cases of the disease he has, since his former publication, found free acid in most of the observations made; and in three of them the autopsy confirmed the diagnosis. It is not always easy to choose the proper time for the examination of the gastric contents. In some cases of gastric insufficiency in which no acid was found five or six hours after meals, it was detected eight to ten hours after the ingestion of food. The occurrence, indeed, of free acid depends on whether there is any substance present capable of uniting chemically with it, and this again depends on several factors; such, for example, as the nature of the food, and the powers of secretion and absorption of the mucous membrane. In general, we can expect that in the normal stomach the farther the preparatory softening of the food advances, the faster will the free acid enter into combination. To this rule there are some exceptions, namely, when the secretion of acid is very abundant, and when the food remains too long a time in the stomach; for having already taken up all the acid with which it could combine, its presence here acts as an irritant to the mucous membrane, and causes a prolonged and unneeded secretion. An abundant amount of acid may, therefore, be either the result of the activity of the normal stomach, or of the organ in a pathological condition; and we are thus obliged in different cases to draw different conclusions from the same degree of acidity. The opinions of the author have been reached by the examination of a large number of patients. He believes that at least a large part of the cases of so-called hypersecretion of hydrochloric acid are due to insufficiency of the stomach, brought about often by stenosis of the pylorus even of a cancerous nature; as in a patient whom he has recently had under observation.

As regards the condition of the peptic strength to which Riegel attributes so much importance, it is clear that peptic strength can only be present in the filtrate of the gastric contents when there has been an excess of acid and pepsin present. On the other hand, if there is no free acid in the filtrate there will be no digestive strength. It would seem, therefore, that the testing of the peptic strength is a method of but little value, and that the results may be foretold from the chemical examination for acid. Moreover, the failure of the filtrate to digest does not prove that the gastric secretion had had no digestive power, but only that its strength has been exhausted by the food with which it had been in contact. To ascertain the real capability of the secretion of the stomach, we must rely on another and a better method; the determination of the presence of peptone. If peptones be found, then the time of the ingestion of food and the intensity of the peptone reaction are to be taken into consideration, and in this way we may draw valuable diagnostic and therapeutical conclusions concerning the real condition of the gastric secretions. As a matter of fact, the author has but rarely failed to find peptone by the biuret reaction in cases of carcinoma; and then only toward the termination of the disease. The use of artificial digestion for diagnostic purposes he has not found necessary; and if it is to be used at all, the pure gastric juice should be employed, obtained from the empty stomach by one of the usual methods.

Although fractures of the nose follow a variety of causes, the violence is always of a direct character. The nasal bones, from their prominent position, suffer more frequently from injuries of this region. The cartilaginous septum, in the author's experience, is seldom fractured, but is frequently dislocated. More rarely the lachrymal bone, the nasal process of the superior maxilla, the vomer, and the central plate of the ethmoid, may be involved. In all cases of fracture there is more or less hemorrhage.

The amount of deformity will depend on the amount of swelling and ecchymosis which follows the injury. The septum may be considerably dislocated laterally without appreciably altering the contour of the nose.

When this structure is fractured, however, or dislocated backward, a characteristic depression will be seen immediately beyond the extremities of the nasal bones. The nasal bones themselves, when broken, may be displaced backward or to either side. If the lachrymal bones are implicated, emphysema of the

eyelids and cellular tissue of the orbit is apt to follow.

The treatment of these cases should consist in arresting the hemorrhage, restoring the parts to their normal condition, and the application of proper means of retention. The bleeding is best controlled by plugging the nares, and as the posterior nares are never involved they need not be packed. After a single fracture the displacement does not tend to recur after the parts have been restored, but in the cases in which there has been comminution some means of retention after reduction is necessary. The method so often recommended, of plugging the nose after introducing a catheter, followed by the application of pads of lint applied to the nose externally and retained by adhesive plaster, is condemned, on account of being both unsurgical and disappointing in results. Downie uses the leaden mask, in conjunction with intra-nasal splints made of the same material. After reduction the intra-nasal splint is applied. This somewhat resembles an almond in shape, and is furnished with a wing on either side at the broadest point. The flat proportion lies in contact with the septal cartilage, and the curved wings lie against the inferior turbinate body.

The external splint is then fitted; it consists of a single piece of sheet lead, the nosepiece of which is prolonged over the alae and on to the cheeks to give support; the upper part is continued on to the forehead. The whole is covered with a layer of silk or linen fabric fixed to its surface by means of paste. In dealing with old fractures the parts involved must be very thoroughly broken up, after which they can be moulded at will.

The intra-nasal splints may be removed at the end of four days, and the external splint in six days. Either, or both, may be reapplied if necessary. For controlling moderate hemorrhage, a 5-per-cent. solution of antipyrine is recommended.

Schmidt advocates the total extirpation of popliteal aneurisms. The aneurism is to be removed exactly as if it were a tumor. The advantages over the Antyllean method, which is the next most radical, is that no unnecessary part of the diseased vessel is left behind, which might become the seat of suppurative processes. In the forearms and legs, where there are two main vessels of supply, and the chance for a good collateral circulation is very favorable, the radical method is the operation of choice. The author details a case in which he excised a popliteal aneurism from each leg of the patient. The most tedious part of the operation, in nearly every case, is the separation of the vein from the artery. The integrity of the vein should be maintained if it is possible. The author prefers packing and secondary sutures, to be tied in forty-eight hours. In the twelve cases collected by the author (including his own) the results have been very favorable. Gangrene did not occur; even an accidental cut of the vein had no unfavorable influence upon the establishment of collateral circulation.

Tyson notes the relief in cardiac dropsy obtained from the occasional use of purgatives—five to ten grains of blue mass, followed by a saline, or the continuous use of small doses—one-half to one grain thrice daily. In regard to digitalis, the suggestion is made that the greater apparent effect of the infusion is due to its use in larger dose, although it is likely to be better borne by the stomach. Strophanthus, better borne by the stomach, has been used in doses of ten minims every two hours for forty-eight hours without interruption. Caffeine in three-grain doses every three hours, in mitral regurgitation, is admirable, but is likely to produce insomnia. Sparteine in one-quarter, increased to one-half grain dose, three to five times daily, is valuable if a diuretic effect is desired. For irregularity of heart action and palpitation, which are more common in mitral disease, belladonna is a very useful remedy. A belladonna plaster placed over a palpitating heart is one of the most efficient agents in subduing it; nitro-glycerine, one one-hundredth of a grain, increased to double the quantity, three times daily, is often very useful to the same end.

In a resume of publications on the basic ointments known as mollin and salve soaps, Brooke states that mollin is made by saponifying lard with caustic potash solution in the cold so that seventeen per cent. of the fat remains free, then warming the mass with thirty per cent. of pure glycerine. It forms a dull whitish body which smears well and is yet of firm consistence, keeps unchanged, washes off readily from the skin simply by the application of water, and does not soil the clothing. It forms an admirable base for a mercurial ointment rubbing up quickly with equal parts of the metal, and forming a cleanly ointment. Mollin will also form an excellent basis for all ointments except those soothing ones used for the more acute affections. Kirsten speaks very highly of a mollin ointment made with tincture of iodine with which he gets remarkably good results in all inflammatory and non-inflammatory swellings of the superficial parts, e. g., of the glands, periosteum, subcutaneous cellular tissues, lymph vessels, muscles and skin, the absorptive treatment of whitlows, boils and abscesses, chilblains, etc.

Unna adopts a somewhat different method of using the same combination. He makes a soft soap by heating caustic potash with lard instead of with oil as in the ordinary process, and to this he adds five per cent. of lard. This mixture, which he gives the name of salve soap or sapo unguinosus, he uses partly as a soap and partly as an ointment. Combined with the requisite drug, ichthyol, tar, etc., it is first rubbed into the skin for five or ten minutes, either with wet cotton or with a stiff brush as the case may demand, until suds are freely produced; these are then washed away with water and the skin is wiped dry. By this means the soap and fat penetrate thoroughly into the epidermis and sufficient is left on to form a covering. He does not consider it desirable to add more than five per cent. of fat; but if it is wished to diminish the effect of any particular salve, glycerine, lanolin or vaseline may be added to it. If a large excess of fat is added the character of a soap is lost and the mixture becomes a soap-ointment. The following is the formula for iodide of potassium salve-soap: R saponis unguinosi, ptes. ix; potasii iodide, ptes., j; ichthyol pauxillum.

—Japan has an avenue of trees fifty miles in length. The trees are the cryptomera, and every one is a perfect specimen, quite straight, from 130 to 150 feet in height and twelve to fifteen feet in circumference. The avenue extends from the town of Namada to Nikko.

VENEREAL DISEASES.

M. E. FITCH, M. D.

THE conditions which exist in sterile men may be classified under two headings; either absence of spermatozoa or seminal discharge. It is absence of spermatozoa that is the most frequent cause of sterility among men, and this condition is rarely suspected since coition may be complete, and accompanied by an abundant seminal discharge. After an extended clinical investigation Furbringer concludes that in all cases of procreative impotence there is permanent azoospermatism, and that the cause of this absence of spermatozoa in the semen is (with few exceptions) an obliteration of the seminal duct due to a double gonorrhoeal epididymitis or funiculitis. Since Kehrer found in forty cases of matrimonal sterility, that the cause lay with the man in fourteen, since coition and ejaculation on his part are, by himself and by the physician, taken as evidence of his competency, and consequently fruitful women are subject to tedious cures and gynecological operations. Furbringer strongly insists on the most careful examination of the husband, and on the microscopic investigation of his ejaculation in all such cases. The prognosis is absolutely bad in cases which have lasted longer than three months. In aspermatism there is no ejaculation. The permanent form is caused either by a displacement of the ejaculatory duct by which the secretion is carried toward the bladder, or by a well-marked stricture of the urethra. In the latter case an erection may make a stricture entirely impermeable which, under ordinary circumstances, allows of the passage of a moderately full stream. Furbringer observes that the prostatic secretion is the source of the strong seminalodor, the secretion of the testicle being absolutely odorless. The statement is made that the spermatozoa show motion only when mingled with the prostatic fluid.

Savage was for several years in the habit of getting friends of patients with general paresis to fill in a printed sheet relative to the affection. In this way he obtained nearly a hundred such, and from these, combined with experience in consulting practice, he has drawn a considerable number of facts which he believes to be trustworthy. General paralysis is, he believes, a degeneration rather than a specific disease, and is most seen in middle-aged married men, inhabitants of cities, flesh-eaters and drinkers of alcohol. It frequently follows constitutional syphilis; and is not uncommonly related to head injury or to causes of nerve-tissue disease, such as those produced by lead poisoning.

Two special forms are seen at the onset: the gradual and the sudden. In the former there is a steady and progressive degradation of mind and body, so that the highest faculties show the first evidence of change. In the latter there is nothing to warn until suddenly a convulsive seizure, or an attack of emotional excitement or one of mania appears. Probably in both there were earlier changes going on which were hidden. In many cases one meets with no account of early fatigue. This may precede the common symptoms by a year or more, and may for a time be replaced by a morbid buoyancy. This sense of fatigue is an important symptom, and is associated with indecision, doubt, gloominess, and even hypochondriacal weakness. It is only really valuable as a symptom when associated with predisposing conditions in which paralysis of the pupils, or loss of power of expression by speech or writing can be detected.

Ataxia, often the first symptom of general paralysis, may be a symptom of the disease occurring at any period during its progress. Ataxic symptoms may be fully developed for several years before there was any suspicion of general paralysis. In these cases he has always found a history of syphilis. If the ataxy is part of general paralysis there will generally be muscular defect of the hands and tongue out of relation to the progress of the ataxy, and the symptoms will be either those of exaltation or of hypochondriacal melancholia; whereas, if the insanity be that of ordinary ataxy it will be of the suspicious or persecuted description.

A most striking warning symptom is temporary aphasia, not necessarily followed by general paralysis, but cases occur in which this temporary aphasia has come on without apparent cause, and from this date there has been some defect of speech, the lips have been tremulous, or the expression faulty. It is common for these attacks of aphasia to recur at irregular intervals; and after several recurrences—it may be at intervals of a year or more—some other signs of disorder appear. In nearly all these cases disorders of speech and writing are early and clearly evident. Aphasic attacks may occur years before symptoms of general paralysis develop. Related to aphasia, and coming after it, is a change in the handwriting. Some patients give up writing or alter their method of holding the pen for a year or more before signs of general paralysis are declared.

Facial expression is very early affected and is very typical; the wiping out of the lines giving an appearance of fatness. Ptosis and external strabismus are rare as symptoms of general paralysis, but are not very common as early symptoms of a diseased process which ends in general paralysis; if after a history of syphilitic cranial nerve lesion there are any signs of nervous instability, there is reason to fear that general paralysis may be the result. In the same class of cases are the instances of serious head injury followed by local paralysis, which has passed off only to be followed by the steady mental and physical degradation which terminated as ordinary general paralysis. Recurring momentary slight or partial losses of power or sensation, sometimes comparable to attacks of petit mal, are warnings of general paralysis. An onset of fits of an epileptis, prompt one to look for other signs of degeneration. If such fits occur at irregular intervals in an otherwise healthy middle-aged man, and if each fit is attended by marked mental changes, and if expression is in any way permanently affected, general paralysis is only too certain. These fits may precede the ordinary symptoms by some years in reported cases.

Early sensory defects in general paralysis are not so easily recognized as are the motor alternations. Neuralgia, headache, sciatica, rheumatic pains, and the like antedated by a year or more the recognition of the disease in almost all the author's cases. Headache or facial neuralgia was the most common, in contradistinction to the rarity of headache in the insane. Double sciatic, especially if recurrent and associated with any change in character or habits is a warning not to be overlooked. Temporary loss of sight, and alterations of hearing, taste, and smell, are sometimes early warning symptoms.

Progressive loss of the highest refinement on some of the senses is manifest. Thus the general paralytic artist early loses the fine balance of tone and his colors become bold and crude. In speaking of the intellectual changes which occur as warnings of general paralysis, is seen the loss of power of social accommodation as one of the earliest and most marked. The patient falls out of step with his fellows, though entirely unconscious of it. The actor forgets his part, the artisan makes misfits, judgment fails. Memory for recent event or engagements is defective, and this is especially marked if fainting or other fits have occurred. Loss of power of attention, want of persistence and restlessness are marked.

In the early symptoms may be classed such factors as instability. This is evidenced as tremors of the finer muscles, uncertainty of gait, tendency to falls. It is a very common thing to hear that a fall has been the cause of the paralysis, whereas it was but the evidence of early paresis. This instability is marked almost by the extreme readiness with which the patient is affected by stimulants, or drugs, or poisons. This evidence of weakness of the damaged brain is practically of great value. Change of temper and character are probably the most constant of all the changes of early general paralysis. Change of character, instability of purpose, occurring with some motor weakness, almost always point to general paralysis if met with in a middle-aged man. Hypochondriasis may be one of the warnings of the disease. In such cases the morbid ideas are, as a rule, centred in the gastro-intestinal tract, and in addition there are physical signs, such as inequality of the pupils or speech defect, to aid us. The occurrence of marked hysterical or hystero-epileptic fits is even more alarming than the epileptic fits in middle-aged men, to which reference has already been made. The sudden outbreak of mania, especially of acute delirius, mania, unpreceded by melancholia, and without apparent cause, is a frequent precursor of general paralysis.

Lane has protested against the administration of mercury as soon as a chancre shows a tendency to indurate. In such a sore the induration may be inflammatory in its nature, due to the application of irritating substances, and treatment by local means would be followed by healing. He believes it to be more satisfactory to await the appearance of some of the secondary sequelae, which will render the diagnosis incontestable, and the chances for an eventual cure are improved. When mercury is administered early the secondary manifestations are delayed, but when they do appear they are of a more chronic form and by no means amenable to treatment. These patients are prone to obstinate affections of the mucous membranes and of the iris, and they are liable at a later date to develop symptoms of cerebral syphilis. It is not conclusively proven that the risk of the supervention of tertiary symptoms is in proportion to the severity and prolonged duration of the secondary stage, nor should any attempt be made to abort or shorten this stage. Mercury should be withheld until the appearance of a roseola or some other secondary lesion, and then be promptly and efficiently administered, preferably by inunction.

The testicle may be affected so slightly that it needs the microscope to detect the malady. In a certain small percentage of cases of congenial syphilis the lesions of the testicles are such that they can be detected by physical examination. These lesions may be present at birth, arise soon after, or appear only some months or years later. This general rule seems to be from birth up to two or three years, not often much after, and very rarely indeed at puberty. The globe is, more often than not, alone affected, but not infrequent the globe and epididymis suffer together, and quite exceptionally the epididymis is attacked singly. It appears that the cord may suffer. The vas, vesiculae seminales, and prostate are not attacked, at least so far there has been no record of such a complication.

The disease is very frequently, but not invariably, bilateral in its distribution, though one side may be more advanced in pathological changes than the other. Hydrocele of the tunica vaginalis is not such an infrequent accompaniment of the malady as some writers would have us believe, and it may be, in young infants, the earliest indication that there is something wrong with the testicles. In all probability, as time goes on, the fluid is reabsorbed, and then the condition of the gland itself becomes more marked. There is just a possibility that hydrocele of the cord may, in some instances, owe its origin to congenital syphilis. The swelling of the testicle is a painless one; it feels like scirrhus; it may, or may not, be nodular, the latter for the most part, and a fungus testis is sometimes seen. The enlargement of the affected organ is usually not great, and, in fact, there may be none at all, it being a very rare occurrence indeed to find in infants and children a testicle the size of an egg. In the large majority of instances the microscopical appearance is that of the simple inflammatory form, passing on to the development of fibrous tissue with consequent destruction of the gland.

The sources of acquired syphilis in childhood can be grouped under four heads: 1. Suckling; 2. Rearing; 3. Criminal Offences; 4. Medical Treatment.

1. Suckling. Many children are infected by their nurses; a fact too little recognized, although examples may be reckoned by thousands. In a first group of cases it is a syphilitic nurse that takes the child to suckle, and from a mucous tubercle upon her mouth or breast she infects her charge. In the second group, the nurse is at the same time offender and victim. In the course of her avocation she contracts syphilis, which she hands on to her charge. A healthy nurse may tend an infant which is healthy to all appearances, but she contracts the disease. In her turn she infects either her own offspring or others to whom she may act as a wet-nurse. At other times a healthy nurse takes charge of a healthy child, but she one day chances to give the breast to a strange child that is syphilitic, and she and her charge then become infected. This point the author insists upon, and he attributes to it an astonishing number of cases of syphilis. It is to be remembered, however, that the habit of employing a wet-nurse is very much more common in France than in our own country, where the practice is rapidly being superseded by the more convenient and safer expedient of bottle-feeding.

2. Rearing. The child may take syphilis from its family, from servants, from visitors and others. a. It is often taken from the mother. If a woman contracts syphilis after delivery she may communicate it to her child in various ways, the most common being by the act of kissing. b. The father is less often

at fault, as he has little to do with the child. c. The infant is often infected by its nurse, either by kissing or in some other way. In this connection it may be noted that many infants live much more in the society of the nurse than of the mother, especially among the better classes of society; hence the frequency of this method of contagion. d. A child is often infected by other children. It is a common trick with children to put toys and other objects in the mouth. e. The poison may be communicated by strangers, workmen, or visitors, and usually by the act of kissing. f. One often sees cases of domestic contagion where from poverty the utensils are few and are used in common. Thus cases have been contracted from infected feeding-bottles, sponges, and bedding. Vidal de Cassis has reported the case of a poverty-stricken household where one cup was used by six children, four of whom contracted syphilis.

3. Criminal offences upon children ,followed by syphilis, are rare; still, it is easy to find plenty of instances. At Lourcine one frequently meets with children of ten or twelve or even of six or four years of age who have contracted the disease in this way. This class of crime is not always due to criminal passion, but often to the superstitious belief that an affected person may thus get rid of the disease.

4. Medical treatment. As in the case of the adult, a child may be affected by the hands of a medical attendant, or by surgical instruments. Some years ago a vertable endemic of the disease was reported as the result of catheterism by a specialist. Circumcision is answerable for a certain number of cases of the disease, a fact first pointed out by Richord Bardinet, of Limoges, relates the case of a midwife who carried on her profession notwithstanding the fact that she had syphilitic lesions on one of her fingers. She infected no less than a hundred persons, directly or indirectly, in the small township of Brives. Lastly, there is a vaccination syphilis, which is becoming of very rare occurrence from the general adoption of the animal lymph.

Porter has attempted to find a clear and rational physiological explanation for the good effects that are known to follow when mercurials and iodides are introduced into the system as medicinal agents. He believes that these inorganic compounds, taken into the body in excess of the absolute demands of the physiological economy, act as foreign bodies, and in this way become universally irritants to the system. To remove this element the system is called upon to make abnormally great exertions, and in attempting this extra amount of work there is at once a demand on the part of the physiological economy for a larger nutritive supply to accomplish this excessive amount of work. If the foreign body can be eliminated from the system, and a sufficient nutritive pabulum supplied and assimilated to sustain this increased demand upon the vital expenditures, the system is in this indirect manner generally improved in its nutritive vitality. He concludes that the inorganic compounds are not chemically decomposed in the system, but act by their mechanical presence; that the action of the mercurials and iodides is governed by the same general chemical and physiological laws, and that they act in a similar manner; that the urine should be carefully watched and frequently examined when using these inorganic compounds; that diet, digestion and assimilation should be as accurately regulated as the dose of the drug, if the best results are to be obtained from our therapeutic agents.

Gowers says there is no real evidence that syphilis ever is or ever has been cured, the word syphilis being used here to designate that which causes the various manifestations of the malady. The assertion that "syphilis is an incurable disease" is the shortest way to state this fact, and is legitimate if we recognize that by "incurable" we merely mean that there is no proof of cure. The conclusion that the essential element in the disease resists treatment, and runs its course uninfluenced by our efforts, is in harmony with what we know of other specific diseases due to a poison introduced from without, and communicated from one person to another. There is not any fact whatever to show that a single disease of this kind can be cut short. The course of the acute exanthemeta cannot be arrested by any means at our disposal at any stage of their course, and the same seems true of this chronic exanthematous disease. This is eminently true, also, of the disease that stands perhaps nearer to syphilis than any other known malady—leprosy.

He believes that the iodides are effective in themselves, and do not act merely by bringing into activity the mercury which may have been deposited and held inert in the various tissues; that there are probably late syphilitic lesions over which the iodide has no influence and which yield to mercury, although he has seen no case of intracranial disease in which there was reason to believe that mercury was successful when the iodide had failed. He prefers the employment of mercury by inunction, and says wisely that he has been deterred from trying the hypodermatic method because published evidence did not afford satisfactory proof of superiority, "and because this method seems to afford an opportunity for psychical influence not free from risk of that which is undesirable." He prefers interrupted course of treatment, which should be energetic but should continue only a little longer than is necessary to remove the lesion; being repeated, it may be, after an interval occupied by tonic treatment, or by the other of the two chief drugs. He adds: "If it is true that we cannot cure syphilis, it is most important to consider how it can best be kept in check. This is why the fact of incurability, if true, is so important. A mistaken belief in curability may dangerously hinder attempts at prevention. If no present treatment can prevent future developments, then it is wise, whether these come or not, to anticipate them. I think a custom, sometimes recommended, is prudent, that every syphilitic subject, for at least five years after the date of his last symptoms, should have a three weeks' course of treatment twice every year, taking, for that time, twenty or thirty grains of iodide a day. If this practice were adopted generally, is it not reasonable to anticipate grave lesions would be much more rare?"

Dr. Gowers' opinions are always worthy of careful and respectful consideration, but those expressed here in reference to the essential incurability of syphilis, and in regard to the employment of uninterrupted course of treatment are so important, and at the same time so much at variance with those of many distinguished syphilographers, that it seems right to suggest that possibly they are the result of an experience which deals chiefly with the later, the graver and the most intractable forms of the disease, namely,

those affecting the great nerve centres, and which does not give the neurologist the opportunity of following the course of the case from the primary stage through many subsequent years, as constantly happens in the work of both the syphilographer and the general practitioner. They should not be considered as decisive, nor does Dr. Gowers himself seem so to regard them, as they are mostly advanced.

A DISCUSSION OF NERVOUS SUBJECTS.

BY A. R. WILLIAMSON, M. D.

THE patient, a female, aged 40 years, has a good family history; her father died of old age, although there is a history of paralysis during the latter part of his life; it is probable this paralysis was due to a peripgeral neuritis. Her mother died at the age of 64 years, and had never been ill until just before she died. Her brothers and sisters also have not been ill. A cousin became paralyzed after reaching manhood, and for the past two years has not been able to walk. I do not know that these facts have any particular bearing upon this case; yet it is a co-incidence if nothing more that such a small family should have such a large percentage of paralytic cases. The principal signs manifested by this patient are all referable to disease of the spinal cord, which has produced that paraplegia. She tells us she was perfectly healthy during childhood. There is no history of any uterine abnormality or menstrual irregularity. She was married at the age of 24, and has had four children, all the labors were normal, she had never been ill until recently, except during the periods of her confinement, and, of course, these periods can hardly be placed under the category of illness, according to medical usage.

About two years ago she states she was suddenly attacked with intense pain in the back, and simultaneously with this there was incontinence of urine and faeces; this incontinence being greatest during the exacerbation of the pain, if there was any difference in degree of incontinence of urine and faeces. Her sister tells us the onset was more gradual. This case is undoubtedly one of acute myelitis. This disease may come on quite suddenly, as she tells us it did; almost as sudden as apoplexy. She says she left the house apparently well, and returned to the house with the greatest difficulty on account of the paraplegic attack, which came on during the short period of absence from home. Whether the onset was sudden, as she tells us, or not, it does not matter so far as the symptoms she complains of are concerned. The symptoms now are constant and severe and still manifest exacerbations. It is hardly necessary to add that she is now entirely confined to bed. During the summer she was in a hospital. Her appetite is poor; her bowels are constipated, and she suffers a great deal from insomnia, which is occasioned by the pains referred to above. She has no headache; that is, so far as we can obtain the history of the attack. There was one exceedingly interesting circumstance to which I have not as yet alluded; and that is to have a marked bearing upon the etiology of this affection. The patient has a scirrhus tumor on one of the breasts—I think it is the right—and it is not a very voluminous tumor. The size of the breast is not greatly increased; but there is a great induration, and there is a retraction of the nipple, as may be readily perceived. Now, I say that may have a marked bearing upon the etiology of the disease from which she is suffering; because cases of paraplegia begin, as in her case, and are most frequently due to some disease of the vertebre, and which is most frequently associated with tuberculosis or carcinoma. There is no suspicion of tuberculosis in this case; but there is much more than a suspicion, there is a certainty of carcinoma of the spinal cord and vertebrae.

Of all the organs of the body, according to statistics, the breast is more prone to cancer than any other. Carcinoma of the vertebre involving the spinal cord and producing paraplegia, is more apt to be secondary carcinoma of the breast than any other organ. According to some notes made by Dr. Spillier, the knee-jerks are very much diminished; they are not extinguished. Now, in a case of paraplegia, the cause of which is situated above the lumbar region of the cord, the knee-jerks may be present after the first shock of the disease is past. If the first shock is sudden, the inflammation or myelitis or hemorrhage, is from another cause; and, after that passes off the knee-jerks are decidedly increased. But here they are diminished. It may be that the myelitis extends further downward than we suppose it does. Ankle clonus is distinctly present on the right side, but is easily exhausted, that is, if we make dorsal flexion of the foot on the right side, there is clonus of the foot. But this phenomenon may be repeated a few times, and then it will cease. There is also this ankle clonus on the left side; but it is not so distinct. There is also reflex in the feet. These two reflexes may be increased or diminished together. There is said to be marked reflexes on both feet; that is, the large toe is responsive on both feet. The attempt to get these reflexes is followed by pain in the back. There is complete loss of sensation to touch, pain and temperature in the lower limbs, back and in the lower part of the abdomen. The same is true of the lower part of the back, with the exception that a deep pin prick (pins and needles) is felt in this portion of the back. The area of disturbed sensation extends upward on the front part of the abdomen as far as the line to the umbilicus up to an inch higher than this. She has what is almost invariably observed in cases of this kind; that is the sense of constriction around the waist, more marked on the left side than on the right. Remember, there is absolute incontinence of urine and of feces.

The right breast is distinctly hard to the touch, which is suggestive of malignant disease, and it is extremely sensitive to pain in the spine, about from the tenth to the eleventh dorsal vertebre; she complains of weakness in the left arm; also in the right upper arm. The pupils are equal; the reaction to light is prompt in each eye. The wrist jerk is prompt. The daily notes of the case give a normal temperature, with a pulse somewhat accelerated averaging perhaps 100, occasionally in the evening it was as high as 112, then 98, and sometimes late in the evening 98.2. This is then a condition of a case of myelitis of long standing, chronic and secondary, we believe transfusion to the tenth or eleventh vertebre, due to some disease of the tissues of the medulla, and

the carcinomatous involution embracing the medulla, and what is more, it has given rise to an inflammation, owing to the deformity of the spine.

This case is not then one that is called Pott's disease of the spine; not one of involvement of the bones.

Now, a further interesting point about this case and others like it is, that, while there is loss of power of motion in the lower limbs, and of sensation in these same regions, there is intense pains in these parts, the conditions being what is graphically described as anesthesia dolorosa. There is anesthesia in as much as there is no sensation of touch, no response to touch, no sense of pain, no sense of difference between heat and cold. This is due to irritation of sensory fibres in the cord, which sensory fibres are a continuation of fibres which are distributed also to the extremities; and the extremities being irritated, this condition is referred to the parts to which the nerves are distributed, in accordance with a well-known physiological law. On touching the soles of the feet, she feels it very little; tickling the soles of the feet is very disagreeable to a healthy person. Pin pricking the instep and top of the foot she does not feel; it is not present at all. There is no pain from the pricking, though she feels pain. The anesthesia extends upward to the umbilicus, and the dividing line between the anesthesia area and the normal may be very sharp, or it may not. I do not know what are the facts about this matter in this particular case, but sometimes for the space of about two cubic millimeters there is an area in which the sensation is blunted. In other words the transition is gradual. Pinpricking the abdomen is felt above the umbilicus, but below it it is not felt. You have seen the immobility of the lower limbs: You have seen that she is unable to move them. You have heard it stated that there is complete incontinence of the urine and of the feces; also a distinct pain over the spine, where a touch of the finger hurts. The grip of the left hand it seems is not strong as the right; but this is the case with many people, unless they happen to be left handed. There is a paralysis of the left side, in which they take the left hand to move the right arm, and the right hand to move the left arm. You will recollect that the muscles of the upper arm, especially the right side are weak. You see she can move the right arm with the left hand. It looks as though the myelitic process was extending upward, and more rapidly on the left than on the right side. It is not as much as in anterior polio myelitis. There are no trophic disorders; no herpes; no bullous eruptions; no shedding of the epidermis; no desquamation. There are no bed-sores as yet. Bed-sores are very apt to occur in cases of this kind, even under the best nursing. There is no involvement of the posterior cornu of the cord. When they are involved it is apt to give rise to bed-sores which are trophic in character and which are almost impossible to prevent. When it does occur the patient or friends should not be too hard on the nurse, as it is not necessarily a case of neglect when bed-sores occur in connection with spinal disease. Although this patient has incontinence of urine and of the feces, I have not observed any unpleasant odor from her bed, and this speaks a great deal in favor of the attention which she has received and which is hard to receive anywhere else than in a first class hospital. It is almost perfectly impossible to keep these patients clean. They experience a natural sense of disgust, and for this reason cases of this kind are refused admission into many hospitals. We have in this case a clue to the etiology which we are frequently called on to dispose of in cases of myelitis.

There is very little to be said in the way of treatment. The only form of myelitis in which we can hope for much success from the use of drugs is that dependent upon a syphilitic infection, upon a gummatous tumor, or upon a syphilitic inflammation of the spinal cord, which inflammation is capable of cure, and it is frequently absorbed by the internal use of mercurials and the iodide of potassium. The pain is to be relieved by opiates, and there is no reason why the patient should not be relieved with any narcotic that will be found best to obtain the desired result. The danger of the chloral or opium habit should not enter into the question. The object is to make the patient as comfortable as possible as long as she lives.

The prognosis is not favorable; even if we suppose the inflammation to remain localized; no transverse inflammation of the cord in the dorsal region may be expected; but the downward extension of the myelitis, incontinence of urine and feces is a more serious affair. As the inflammation extends upward the parts there become involved, such as the pneumogastric, and other nerves.

Case 2. This patient has been in the hospital for some time. Her case may be classified with the other in as much as the disease from which she suffers is one of the nervous system. Her age is 50 years, initials J. R. The diagnosis of this case is easy. She gave a history of pain in the left thigh, which she attributed to a needle puncture. The needle entered in the gluteal region and worked its way up. It was removed by an operation. It is certainly a co-incidence that after an injury such as she describes puncture in the gluteal region by a needle which embedded itself so in the thigh that she could not remove it; that it passed upward. This pain passed down under the knee and was sufficient to keep her awake at night, and it rendered her more or less uncomfortable during the day. There is no albumen or sugar in her urine. It is important to know this, as it excludes the presence of glycosuria, which is frequently found to co-exist with sciatica, and believed to be at the root of the disturbance. This trouble is by no means more common in women than in men. The pain being so much more severe on the right side than on the left. Our patient has preserved the needle which to me looks very much like any other needle. The excursions which needles take in the body is extraordinary. One entering at the lower extremity may come out in the upper. However, I doubt very much whether this accident gave rise to this sciatica, and yet there is no cause for it in her case. Other causes for this neuritis are exposure to wet and dampness, sleeping on wet ground, a tumor in the pelvis or in the vertebra, aneurism in the abdominal aorta. Now it is a curious fact that a needle should suggest one of the methods employed in the cure of sciatica—acupuncture. This is an old method and sometimes is a very effective one, but is not always applicable to every case. In some cases the sciatica is purely an inflammation of the sciatic nerve; in other cases it is purely a neuritis. Fluid getting into the nerves

or surrounding parts may give rise to this trouble. It is impossible to say in any given case whether the nerves are inflamed or not. We recognize sciatica by pressure on the various regions, as the popliteal space; also that the pain follows the outside of the leg and the outside of the foot. The difficulty is in determining the cause of the lesion. Injections of various substances are employed. A hypodermic syringe is filled with distilled water and the water is then injected into the region of the nerve. Osmic acid is recommended by high authorities. Fifteen drops of this, or a 1 per cent. solution, diluted with sufficient water to fill a barrel of the syringe, is injected along the nerve. Strange to say the drugs that are so efficacious in the upper part of the body, especially head and face, are of little use in diseases of the sciatic nerve. The various coal tar products seem to be of very little efficacy in sciatica; but you will note that they are very efficacious in neuralgia of the face.

Iodide of potassium is useful in many of these cases, especially those of syphilitic origin. I would recommend the use of remedies intended to build up the system. Pelvic tumor could be removed by an operation. Arsenic, cod liver oil; keep patient at rest; if pain is severe, so as to prevent rest, the bloodless stretching of nerve, which can be done by cutting down and exposing the nerve and catching it on a hook. But the nerve can be stretched without any operation.

Neuroma is often employed clinically in the same sense in which it was used by Odier one hundred years ago, to indicate a tumor proceeding from a nerve; now we know more of the minute structure of tumors connected with nerves and have learned that they may be sarcomata, or fatty tumors, or to be composed of tissue identical in structure with the endoneurium and perineurium. No one has detected a tumor (apart from amputation bulbs) connected with a nerve which is composed of new-formed nerve-fibrils. A neuroma may grow from the sheath of any cranial or spinal nerve; usually the nerve is spread over the tumor like a strap; the nerve may traverse the neuroma—this is rare—or it may grow within the nerve and spread out its fasciculi like the ribs of an umbrella or fan, being rounded, obovate or like spindles; the roots of the spinal nerves are sometimes beset with neuromata which take the form of ring-like segments imperfectly demarcated.

The tissues of a neuroma are dense and tough, while later parts of these tumors undergo degeneration, and in large tumors the central parts liquefy, becoming fibromata, myxomata, and cystic fibromata.

It is not unusual when a neuroma is concerned for mistakes to be made in diagnosis. How errors arise is important. For example: A young woman came to the out-patient room for advice concerning a small swelling on the back of her right wrist, situated near the styloid process of the radius; this swelling was smooth, rounded, non-adherent to the skin, painful when pressed and exhibited all the clinical characters of a synovial cyst (ganglion), except that it did not disappear when the wrist was extended. From a superficial examination it seemed to be a cyst arising as a diverticulum from the synovial membrane between the radius and the first row of carpal bones. Punctured it with a slender knife; no effect on the swelling was produced, but did not give the patient much pain; it was clearly a solid tumor. Cocaine was injected into the skin covering the tumor, which was then exposed by a free incision. It was discovered to be a neuroma connected with the radial nerve as it lies in the triangular space bounded by the tendons of the extensor primi and extensor secundi internodii pollicis. The neuroma, as large as a ripe cherry, was then dissected from the nerve without difficulty, the wound rapidly healed and there was no impairment of sensation. On the intercostal nerves neuromata are found. For example: A woman thirty years of age complained of a lobulated tumor occupying the eighth intercostal space on the right side in the axillary line, which was a source of trouble and pain to her because preventing her from tightening her stays. The tumor was shaped like a dumb-bell; the extremities were as large as the top of the middle finger, freely movable and non-adherent to the skin. Its mobility, its situation (deeply in the intercostal space) and its painfulness suggested it to be a neuroma. On incising the skin the tumor was found lying between the external and internal intercostal muscles, connected with the nerve by a stalk. It was easily removed.

Neuromata rarely produce pain unless touched, but then the sensations are generally sharp. The trigeminal is the one most liable to be the seat of the neuromata, and even on such a sensative nerve as this they rarely produce much suffering; but there are conditions under which they render life unendurable. Smith, in his admirable monograph on "Neuroma," describes the case of a woman who complained of severe pain in the course of the right trigeminal nerve, which was so increased by mastication that she ate but little; speaking aggravated the pain to such a degree that she always remained silent unless interrogated, and frequently on these occasions she replied by signs. The patient died, after enduring severe and uninterrupted pains during four and a half months. At the post-mortem examination a neuroma as large as a walnut occupied the situation of the right Gasserian ganglion. It is probable that the intense pain experienced by this unfortunate woman was due to the fact that the tumor grew in a confined situation. A woman twenty-two years of age complained of very severe pain confined to the region of the right upper jaw. Notwithstanding the intense pain (which at night amounted to agony) this patient complained of, the region of the face supplied by the pelpebral nasal, and labial branches of the right infraorbital nerve was anaesthetic; a slight thickening could be made out by the fingers along the lower margin of the orbit, and there was a slight upward displacement of the eyeball. On examination the skin supplied by the temporal twig of the orbital branch of the second division of the fifth nerve was found to be normally sensitive; this was also true of the mucous membrane supplied by the posterior dental branch of the same nerve. The symptoms were best explained by supposing the right infraorbital nerve to be entangled in a tumor connected with the roof of the antrum or floor of the orbit. Acting on this hypothesis, I reflected the skin of the cheek, and on cracking away the anterior wall of the antrum I found the cavity occupied by a gelatinous sarcomatous-looking tumor. The parts were freely removed, including the Gasserian ganglion. The pain was immediately and permanently relieved. On investigat-

ing the tumor it turned out to be a neuroma growing from the infraorbital nerve and invading the antrum; in the main it consisted of myxomatous tissue.

When neuromata spring from the trunk of a motor nerve, they are painless; it is important to bear this in mind, as a neuroma has been observed on the trunk of the facial nerve in the parotid gland; the tumor was removed under the impression that it was an ordinary parotid adenoma, and permanent facial palsy was the unfortunate consequence. Cases have been reported in which surgeons have removed tumors from the forearm which had been absolutely painless, and subsequently examination showed that in the course of the operation a large and important nerve, such as the median, had been completely severed. This is very unsatisfactory, and could be avoided if surgeons realized that neuromata are encapsuled tumors.

For example the following case is reported: A single woman, thirty-five years of age, with a carcinoma of the breast, while examining the axilla for enlarged lymph glands a tumor was found in the supra-clavicular region. Manipulation of this tumor provoked pain, not in the neck, but in the ball of the thumb and in the tips of the thumb and forefinger of the same side. The patient was an intelligent woman, and stated that the tumor in the breast had attracted her attention only a few months, whereas the cervical tumor had been present fourteen years. This definite statement was, of course, important, for nothing would have been easier than to regard the neck tumor as a collection of supra-clavicular lymph-glands infected by the mammary cancer. The long duration of the tumor, the pain referred to the digits when it was pressed, and its mobility and uniformity, induced me to regard it as a neuroma connected with the fifth and sixth cervical nerves, implicating more particularly those strands which help to form the median nerve. This diagnosis was verified at the operation, for after amputating the mamma and exposing the tumor in the posterior triangle by a vertical incision, a large nerve-trunk was seen embedded in it; the capsule of the neuroma was then opened with a knife, and a tumor the size of a bantam's egg was readily enucleated by means of a raspatory. There was no bleeding from the capsule. After the removal of the tumor the conjoined trunks of the fifth and sixth cervical nerves were made out.

Remember that all simple neuromata are encapsuled tumors, and that when the capsule is split they can be shelled out with the greatest ease and safety. When growing from the side of a nerve they may be removed with their capsules entirely.

—Notwithstanding the scare advertisements of health-substitutes for coffee (*Amer. Jour. of Pharmacy*), there is no cause for apprehension to the race at large from coffee drinking. After generations of almost universal coffee drinkers, our own times see men of gigantic intellect in all realms of activity. Our athletes are able to make sudden bursts of effort equal to any in history, and our soldiers acquit themselves manfully in fatiguing campaigns in torrid climes. The life insurance companies, constantly warring against all that lessens longevity or conduces to abnormal organs, nerves and actions, seem content to accept the use of coffee as one of the ordinary elements of every-day life.

CONTINUED FEVER.

AT a recent meeting of the American Medical Ass. in New Orleans Dr. Hoppel, of Trenton, Tenn., stated, in opposition to the general received opinion of the physicians of the North, that every continued fever was either typhoid or malaria, that there was a third, not included in the above, in which the blood and secretions neither responded to the Wydal test or showed the presence of the plasmodium malaria. The inception of these fevers was something like that in its symptoms of what is called walking typhoid. The fever showed marked remissions the first week, not so decided the second week, but even more marked in the third week, amounting to intermissions with profuse sweatings. The aching of the muscles resembled the "grippe." The intermissions varied from one to twenty-four hours, the fever being relieved by aconite and gelsemium. A peculiarity of this fever was the disproportion between the pulse and the temperature, the ratio was frequently reversed, the pulse beating between the normal and 90, with a temperature between 103 degrees and 105 degrees or even higher.

National History.—No more important work for general information and reference in everything relating to the history of this country, has ever been published than Harpers Encyclopaedia of United States History from A. D. 458 to 1902, in ten large volumes, illustrated with vignettes and portraits of the leading actors in our national development, and sketches of historical locations and events. Of course this work does not take the place of a regular history, where each step follows the other in orderly succession, the whole a continued story; but presents under separate headings the biography of the men and the outline of their work, in developing not only the growth of the nation as a political power, but in giving an impetus to enlarge liberty and progressive thought throughout the world. The work covers the whole field of national development and progress, including the history of states, the acquirement of territory, the work of the army and navy, the battles fought not only on land and sea but in the halls of legislation with the speeches of some of the ablest statesmen of the world, and the messages of all our presidents. Every department of literature, art, science, and industry is so fully represented and important facts so clearly stated under their appropriate heads that reference can easily be made to any leading event, to any great discovery, and to any one who has distinguished himself in any of the great avenues of thought and of national progress.

—At Helsingfors, in Finland, the practice of prescribing by telephone has assumed such proportions that the authorities have had to regulate it. They require the prescription to be written down as received and telephoned back for verification, with the number. At the first opportunity the prescribing physician must sign the receipt. It is prohibited to dispense poisons on a telephone prescription.

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The real business of life is to find the truth and to live by it.

UNITY AND NATURE OF MATTER.

MODERN science as illustrated in the Congress of Applied Chemistry in Berlin last June points in its recent discoveries to the fulfillment of the dream of Faraday and Davy that in the no-distant future a greater simplicity if not an absolute unity in the composition of matter would be found. Sir William Crooks in his address before the International Congress intimates that this dream is about to be if it has not already been realized. The old theory that the atoms of elements consists of indivisible units of matter has been disproved and the fact shown that each atom is the whole stellar system of infinitely smaller but absolutely identical units, all inorbital motion. A hydrogen atom consists of 700 such units or ions. The nature and identity of each substance depends upon the number of such ions contained in each atom. Thus 11,200 such ions in each atom would produce what we know as oxygen and 137,000 of the same ions would yield what we regard as gold. The eighty elements hitherto identified are thus reduced to one, the nature of which is electrical. In other words electricity and matter are one and the same thing.

The study of the Roentgen ray and Radium show that matter is not stable in its atoms as has heretofore been supposed, but is capable of disintegration. In Radium alone it proceeds so rapidly that the phenomena is easily observed. Experiments by M. Curie, the discoverer of Radium, showed that it spontaneously and continuously disengaged heat, rapidly affected photographic plates even through opaque bodies, discharged an electroscope when merely brought in its vicinity and gave off emenations similar to itself in constant and even violent streams of vibration; in other words, the 120,000 ions which compose each atom of Radium rotated so violently that they flew apart into original units. It has been calculated that this efflux from Radium is so infinitesimal that a square inch would lose only one grain in ten thousand million years. Prof. Lodge thinks that this process of disintegration of atoms is the normal process of nature and may constitute the evolution of the chemical elements. These experiments of M. Curie were so conclusive as to the disintegration of atoms, we do not wonder at the brilliant observation of Prof. Crooks, "that not only are the atoms apparently going to pieces, but the masses of molecules probably dissolve themselves into the ether waves which fill the universe or into electrical energy. Thus we stand on the border line where matter and force pass into each other."

As it is not unusual old ideas seem to be in a measure confirmed by unimpeachable scientific facts, and the belief of the alchemist in the absolute unity of matter or at any rate in its being resolved into a single form of energy fully demonstrated. Indeed, this belief is the basis of the attempt to discover the philosopher's stone. They argued that the originally one substance had in the course of time modified into the various elements known as silver, mercury, sulphur, gold, etc. They therefore thought that by reducing any of these elements to its original state it might be possible to effect in a short time that which had taken nature thousands and even millions of years to accomplish, viz., to change any ordinary metal into gold.

The line of discovery growing out of that of the Roentgen ray and Radium in which the disintegration of atoms is clearly shown, and the unity of matter and its electric character strongly foreshadowed revolutionizes every department of science in which chemistry has become the astronomy of the infinitesimal in all our investigations of the stellar universe and the open gate to supply the energies of life in food and power.

The electric power furnished by Niagara is utilized hundreds of miles from the source of its production, and the Victoria Falls on the Zambesia where the river a mile wide plunges over a precipice five hundred feet high will in a few years by a supply of electric power open to the great family of civilized nations a large portion of Western Africa. The action of electricity upon plant life in the molecular changes of its growth render it by no means improbable that the world's food may be furnished by its means. We know that when intense electric discharges occur in the air nitric acid is produced which, when neutralized with soda, potash and lime furnishes the richest possible nitrate for plant life. Science is now utilizing this very process in its electric works at Niagara in the manufacture of fertilizers. But according to recent researches it is possible to obtain food substances without going through the slow processes of fertilizing the soil and nourishing plant life. Given carbon hydrogen and oxygen in the simple association existing in carbonic acid gas and water a current of electricity of definite potential strength under certain conditions will bring about a rearrangement of the molecules until at length a series of products is formed culminating in sugars. First of all we get oxalic acid, then tartaric acid, next citric acid, until at five volts and three amperes grape sugar appears. We have spoken only of the production of the carbohydrates through electric agency in reorganizing the molecules, but in the production of food we have to deal with nitrogen the essential element of the proteid or flesh forming portion of food. Though at present proteid cannot be constructed directly by electrical means, yet the production of nitrate by electricity is a source of stimulus to the plant and it is not even impossible that proteid will eventually be

built up by the same means and in the same way as is carbo-hydrate. From what has already been achieved by the chemist and the physicist it would seem that in the far future when the present supplies of nature which have been stored up through past ages have been exhausted there still need be no lack of supply of food and fuel for those who may at that time be inhabitants of this planet.

THE RELATIVE VALUE OF MEDICAL AND SURGICAL SERVICES.

STUDENTS of medical history are well aware that, two or three hundred years ago, the surgeon occupied a very humble position, somewhat analogous to that of a modern hospital orderly. Even when he was more than a barber-surgeon and was possessed of considerable technical skill, he was regarded simply as the manual assistant of the physician who, himself, scorned the performance of operations for which he had no dexterity and who was a dignified and honored, though apparently useless attendant at the operation. So far as the memory of the oldest living practitioner reaches, all this has been changed and the surgeon has, within the last generation or two, become a specialist of higher esteem than his purely medical colleague, either in general or special practice.

If we look for an explanation of the fact that, both in prestige and in recompensee, the surgeon has far surpassed the physician, it is readily to be found in the modern appreciation of definite accomplishment and in the comparative depreciation of value of purely general knowledge. So far as any social or financial standing due to avocation is concerned, all this is a thing of the past. There may survive a superficial courtesy for the clergy, the bench or for professional life in general, but so far as any practical consideration is concerned, there is a wholesome tendency to value each man according to his own accomplishments, in relation to his own business or profession, in relation to the financial average of the population at large and in relation to his personal character.

It seems to us that the pendulum has swung too far in the appreciation of surgery and the depreciation of medicine. While surgery during the third quarter of the nineteenth century made much more rapid progress in practical attainments than did medical practice, this advance was mainly due to the application of the principles of bacteriology which, like other scientific branches of medicine, is neither surgical nor medical in the narrow sense. Meantime, with a similar basis of scientific research and with much greater and more tedious labor, medicine had advanced almost as rapidly and to as great a degree as has surgery, though the improvements in internal medicine are less dramatic, less marked in any one phase and more divided in their interest, than those of surgery. It happens that both from the standpoint of the laity and of the profession, the practice of surgery is principally a matter of traumatism with instruments, although the treatment of fractures and dislocations, orthopaedics and other branches must always remain important. Granted fairly good recuperative powers on the part of the organism, asepsis, and, of course, reasonable skill and judgment on the part of the operator, surgery is bound to be successful, from the standpoint of the operator. Medical practice, on the other hand, cannot be thus summarized. No one diseased condition or group of conditions comprises the majority of medical cases, the outcome depends upon a variety of factors often entirely uncontrollable and while even the laity can appreciate the fact that a genuine surgical success may be followed by death or relapse from extra-surgical causes, the immediate and remote results of medical cases are not so clearly distinguished even in the minds of the profession. For example, may be cited gastric cancer with dilatation and stagnation. A surgeon operates on one case, finds that radical extirpation of the cancer is impracticable, does a gastro-enterostomy, allows the stomach to empty itself readily, and the patient recovers his general health and strength for three to six months, and then succumbs to the inevitable progress of the disease. Every one can see that this is a triumph for surgery, that the eventual death is due to uncontrollable cause and the surgeon receives gratitude, honor and a good-sized fee. A physician undertakes a precisely similar case, investigates it thoroughly and by finding blood and cancer nests in the stomach contents or by careful palpation, determines that radical operation is impracticable; by diet, use of digestants, internal antiseptics, lavage, etc., he shrinks the stomach to its normal size, relieves the self-infection and produces, without operation, practically the same result as might have been achieved by gastro-enterostomy, and without the discomfort, dread and actual risk of a major operation. But when the inevitable end comes, we find no popular recognition of the practical distinction between curing the secondary conditions and having them recur or having the patient die from the direct toxaemia and asthenia of the malignant disease. The surgeon succeeds and the patient dies of a medical condition. The physician on the other hand, is charged with failure, after a fictitious temporary improvement of symptoms.

As a matter of fact, some of the grandest successes of medicine are recorded in the histories of fatal cases, especially those in which a vital, azygos organ is involved, rather than in the recoveries from acute, self-limited disease.

That the failure to attach proper value to medical services is not only due to lay ignorance but is characteristic of many practitioners of medicine, is illustrated by the following case: Dr. A.'s wife was seriously sick. Dr. B. examined the blood, studied the symptoms, made a physical examination, and diagnosed a condition of suppuration, which he located within an inch or two. He directed the treatment with a view to securing the best possible condition of the patient and urged operation. Dr. C. operated, evacuated the pus and recovery promptly followed. Dr. C. corroborated the diagnosis in advance, but the operation was not consented to, till Dr. B. urged its necessity. Dr. B. was thanked, Dr. C. received a valuable present. We believe that every reputable practitioner of any branch of medicine has a claim upon every other for the free performance of any professional service and we depreciate the giving or accepting of presents under such circumstances but the case cited seems to us to show a distorted view of the value of the services rendered. Both Dr. B. and Dr. C. gave their services willingly and without thought of reward. They were of nearly equal stand-

ing in their respective fields of practice, their services involved equal skill and knowledge, so far as dissimilar lines of practice may be compared, the time sacrificed was nearly equal. We fail to understand why Dr. A. should so discriminate in his gratitude. If it is because Dr. C.'s services are somewhat more tangible than Dr. A.'s why should he not also have rewarded substantially Mr. D., the pharmacist, who, like Dr. C., carried out Dr. B.'e advice?

It is impracticable for a physician in general practice, attending a family indefinitely, to do otherwise than charge at a fixed rate for each call, office visit, obstetric case, etc., and without regard to the actual difficulty of the case or the result achieved. In the long run, such a custom represents an equable exchange of services for their value, excepting that the market value is subject to the inevitable influence of the excess of the supply of physicians over the demand for their services. This factor is deplorable but it cannot be immediately righted, and it is a well-known economic law that, if two or three men attempt to do one man's work, no one of them can receive his normal pay. The blame for the present abnormal state of congestion of the medical profession does not, it is true, rest directly upon the profession as a whole, but the entire profession, with some few exceptions, must suffer for it. In the case of a medical man called as consultant or otherwise treating a patient who is neither actually nor potentially one of his regular clientele, it seems to us that the value of services should be judged according to the skill applied to the case—and, practically, to some extent, according to the result achieved—and without any regard to the method of therapeutics employed except as one method or another requires more time or expense, involves more responsibility or demands greater technical skill. It is commonly held that surgical operation involves all of these factors in greater degree than medical treatment. Fifty or even twenty-five years ago, this might have been true. But the modern practice of internal medicine rests upon physical examination and the use of instruments of precision which require an investment of time, money and technical skill, fully equal to that of the operator along the same lines. Formerly the performance of an operation involved the assumption of an enormous responsibility, in reputation if not in actual danger of malpractice suits. At present the profession and the laity have been so thoroughly educated as to the possible benefits of surgery and the operative risk itself has been so reduced, that it involves more responsibility to decide against operation than in its favor, in many conditions and probably in the vast majority in which operation is seriously considered.

In a certain case, a surgeon was called, who made the tentative diagnosis of gangrenous appendix, yet, as the case was somewhat obscure and the condition of the patient unfavorable, expert medical advice was sought. The medical consultant diagnosed an entirely different and extremely rare condition, took the responsibility of advising against operation which was practically the only means of saving the patient's life if the former diagnosis were correct, applied to the case numerous diagnostic and mechanically therapeutic methods involving financial cost, time and technical skill considerably in excess of what should have been involved in a coeliotomy, and proved his diagnosis by the result, which was eminently satisfactory to the patient. If he had been wrong in his conclusions he would have suffered severely in reputation both at the hands of the family and their friends and of the medical men interested. If the surgeon had operated, the error of diagnosis would have been readily pardoned, at least by the concensus of medical opinion. Even if the surgeon's diagnosis had proved correct, it was doubtful whether the patient could have withstood the operation. Yet the medical consultant's bill was just half what the surgeon would have charged if the patient had died on the table. The reason for this anomalous condition is obvious: so firmly fixed has become the custom of charging more for mechanic and cutting therapeutics than for internal medical treatment of the same order, that the medical consultant did not dare estimate the value of his services at a par with those of the surgeon.

All this is wrong. It is a common saying that, with reasonable skill and training, a good operator may b made in six months. With skill of the highest order and the same opportunities for clinical practice, an expert internist cannot be made in six years. It rests with the profession to bring the practical value of their services to an equality.

ANCIENT MEDICAL HISTORY.

ACCORDING to the *Lancet* (*Clinical Review*), Dr. Rudolph Herzog has discovered under an ancient Byzantine church in the Island of Cos, in the Egean Sea, the columns of the temple of Esculapius, and a Greek inscription to the effect that "sundry elders from different States have decided by vote to carry on the holy asylum of Esculapius." A statue of Hygeia and an image of a serpent—the symbol of the healing art—have also been found.

It may be recalled that Esculapius, the mythical son of Apollo and Coronis, was supposed to have emigrated from Memphis in Egypt, and to have been taught by Chiron, the combination horse and man of Greek mythology.

Again, Esculapius was represented as an actual personage of about the period 1250 B. C. He was deified and temples were erected by his followers for his worship and also for the reception of sick persons. These temples were called Esclepieia, and their priest-physicians were called Esclepiadae. These temples were founded at Tricca, Epidaurus, Rhodes, Cos, Cnidos, Pergamos, and at other places. The one at Cos was among the most celebrated, and it is probable that it is the remains of this temple that Dr. Herzog has unearthed.

The finding of a statue of Hygeia and of serpentine emblems, gives color to the authenticity of the discovery, for Hygeia was the daughter of Esculapius, and not only was the serpent emblematic of the healing art, but a special breed of snakes was kept in the temple of Esculapius at Epidaurus, in Greece, where he was supposed to have been born. The God Esculapius was supposed to pass into the bodies of thes snakes and they were sold at a high price to cities afflicted with epidemics of disease. Evidently the separation of the functions of saving the soul and healing the body has operated to the detriment of the financial side of the professions of theology and medicine.

MECHANICAL TREATMENT OF WHOOPING COUGH.

DR. JACOBY, in the third edition of his "Therapeutics and Childhood," says: "The mortality from whooping cough in New York City is as great as that from typhoid fever. Twenty-five per cent. of all the cases under a year terminate fatally; five per cent. of those between first and fifth years and one per cent. of all those occurring after the fifth. Its direct mortality, however, is not the only danger for not infrequently chronic laryngitis, pneumonia—emphysemia—dilitation of the bronchia and the results of hemorrhages which occur during the attacks of convulsions—paralysis either general or local impair the health of the patient for many years or a lifetime. Thus the tendency to allow the whooping cough to run its full course on the plea that it is a self-limited disease or that every child must have it once is not justified."

There is no disease whose pathology requires more careful study than whooping cough and none perhaps where drugs have proved less efficient. Neimeyer says, "every paroxysm of cough is an irritant to the laryngeal mucous membrane; the more violent they become the more quickly fresh mucous accumulates and the sooner another attack is to be expected. If we could arrest the spasm of the glottis the backbone of the disease would be broken." Dr. O'Dwyer, to whom we are indebted for intubation for croup, and the spasm of the glottis, pertussis, says, "spasm of the glottis is the sole cause of the acute suffering in uncomplicated whooping cough and could this element be removed the disease would be reduced to the level of an ordinary catarrh. Spasm of the glottis being not only the sole cause of the terrible suffering in pertussis but of most of the danger as well, the main object of medication is the relief of this symptom."

Nageli's personal experience of pertussis in 1886 suggested the line of treatment he adopted in his own family and which in the experience of others has been attended with remarkable success. He says that inspiration becomes impossible on account of spasm of the glottis. At the beginning of the paroxysm a small amount of air would be inspired with the well-known inspiratory crow while at the acme the voice was toneless. Realizing that could the rimaglottidis be opened so that the inspiratory current would be sufficient then the whoop with its congestion and all its consequences would disappear, he attempted with his own children who were suffering with pertussis to accomplish this by standing behind them while they were in a recumbent position and placing the thumbs on the sympathis of the lower jaw the flexed index fingers behind the ascending rami and pulling forcibly and directly forward. The result was most satisfactory, the cough ceasing immediately, the attacks becoming less and less violent with each repetition of the treatment. This manipulation can easily be performed by any intelligent nurse or mother with proper instruction and the paroxysm materially shortened and lessened in intensity, making the recovery more rapid.

In the June issue of the Archives of Pediatrics Dr. Jacob Sobel, of the "Department of Children's Diseases, Beth Israel Hospital Dispensary," gives his experience with this treatment in all cases of pertussis admitted into the dispensary from June, 1901, to the present date. In 96 cases recorded ranging in age from three months to five years there were but nine failures, and even in these failures he thinks success would have been obtained if the procedure could have been carried on regularly at home. Dr. Sobel stands in front of the patient and places the flexed index and middle fingers against the angle of the inferior maxilla, both thumbs along the side of the nose and against the superior maxilla and then pulls downward and forward. If behind the patient the flexed index and middle fingers are placed against the angle of the jaw, the thumb along its body, the remaining fingers beneath and thus manipulated by pulling downward and forward.

Dr. Sobel concludes from his large experience with Nageli's manner for overcoming the spasm of the glottis in whooping cough, an experience confirmed by others, that pulling the lower jaw downward and forward controls the spasms in most instances and that the method is usually more successful in older children than in infants. In cases without a hope the expiratory spasm with its asphyxia is generally overcome—and in those with a whoop the latter is prevented. Of course this manipulation does not do away with supporting treatment or those conditions where special medication is indicated. Thus far wherever tried it has proved a great aid in relieving and shortening the duration of one of the most persistent and agonizing diseases of childhood.

Dr. Lorenz has made popular a bloodless surgery which by the aid of well-directed pressure and manipulation has accomplished results in which the knife has failed, and along the same line the osteopath has relieved where drugs have been ineffectual. At times however, drugs, the knife and mechanical force are required and the man shows the highest skill and best understands the resources of his profession who can adapt each to its proper use.

TETANUS.

IT has been noticed in mortality reports that the number of deaths from tetanus in the month of July equals nearly all the deaths from the same cause the other months of the year. In accounting for the terrible fatality during this month we must look to the use of toy pistols so common during the national anniversary and the failure to recognize the dangerous character of the wounds so often received in the hand discharging them. Notwithstanding the careful analysis of every kind of blank cartridge has failed to show the presence of tetanus bacillus in them, still the fact is none the less established that very many of the most fatal cases can be traced directly to this source. It has been shown that street dirt is a prolific cause of tetanus. In the wound produced by a toy pistol and the condition attending it we can readily see how naturally the disease might be developed. The blank cartridge wad striking the palmer surface of the hand with its flat surface carries with it into the wound a disc of the skin so that we have at the bottom of the wound in the disc of skin, the cardboard of the wad and the layer of dirt on the skin sandwiched between them an ideal hatching place for the bacilli. Every case of blank cartridge wound instead of being so trifling as to demand only

slight attention should be looked upon as dangerous and treated with the same thoroughness that would be called for if it was known positively that tetanus bacilli were at the bottom of the wound. In many cases the wound should be cauterized and in every case the most careful antiseptic surgery should be observed, and if possible a powdered antitoxic serum sprinkled over the wound.

BACTERIAL ORIGIN OF PARALYSIS.

IN many cases of general paralysis it is comparatively easy to determine the indirect cause. Its connection with syphilis, alcohol, lead, etc., may be traced with tolerable certainty, but these form only a small number of cases and do not reveal the actual cause of the disease. Any research which will cast new light upon the subject will be warmly welcome. If the position taken in a paper in the "Review of Neurology, Psychiatry, by W. Ford Robertson, McRae and Jeffery that they have found the bacillus of this obscure trouble and that the toxemia of general paralysis is of gastro-intestinal and bacterial origin it will to a certain extent solve a most difficult question and open the way to a clearer understanding and a more efficient treatment of what has heretofore been looked upon in many cases as incurable. Previous investigations have shown that the alimentary canal and the respiratory tract are the seat of severe toxic infection and that there is one micro-organism found here in enormous numbers but which can seldom, by the same technique, be isolated in any other case than that of paralysis. The organism resembles the Klebs-Loefler bacillus and is most readily obtained from the mucous membrane of the stomach tonsils and bronchi. Rats fed by pure culture for a considerable length of time show all the symptoms of wasting strength, decreased motive power and degeneration of all the organs, especially the nerve cells of the brain and spinal cord. The changes in the nervous system in these experiments closely resemble those seen in general paralysis. It is hoped that still further experiments upon the bacillus may give a clew to their destruction when found in the human system and enable us to restore to health many cases for which at present there seems to be no help.

CONVALESCENT HOSPITAL.

ALMOST important and much needed addition to the hospitals in the Department of Charities has recently been made by Commissioner Folk in establishing in connection with and as a part of the Metropolitan Hospital, Blackwell's Island, a hospital for convalescents who are no longer in need of active medical or surgical treatment but who are not strong enough to resume their work and who are homeless and destitute. To such persons temporary care, rest and food are given as will enable them to gain sufficient strength to resume their ordinary occupation. Chronic, contagious and incurable diseases are not admitted. Patients will be received from the other hospitals of the Department and none will be allowed to remain more than three weeks, except in special cases where the time will be extended to six weeks. Heretofore there has been no public institution in New York for convalescent patients, and as a matter of necessity they have been sent out oftentimes when entirely unfit by lack of strength to labor, only to be speedily returned. The new hospital has been fitted up at an expense of $17,500, and has a capacity of forty beds for men and thirty for women. Additional room will be furnished when needed. The Metropolitan Hospital with its recent additions of tuberculosis and convalescent pavilions is now the largest hospital in the world, and its training school for nurses forms an important addition to its working force.

MUSICAL THERAPEUTICS.

IN a recent editorial we called attention to music as a therapeutic agent of great value in many forms of disease, especially those attended with insomnia and lack of proper co-ordination of nerve force, but stated also that every case should be individualized and the music specially adapted to the condition of the patient, in fact, its specific action should be studied with even more care than the most active drugs and directed by equally trained skill. As a great remedy in a scientific therapeutic it could be utilized with greater benefit when properly indicated than almost any other remedy.

The adaptability of special music to individual cases has been very recently illustrated by Dr. Emmett C. Dent, the Superintendent of the "Manhattan State Hospital for the Insane," an institution numbering five thousand patients, where most of the female patients are confined. Desirous to test the general effect of music upon the insane he gathered a number of patients in the assembly room without any regard to the character of their malady and ordered the institution band to strike up a stirring national air. An entirely different effect was produced upon different individuals. The room became a pandemonium. Some were quieted but others were thrown into states of increased violence. What soothed one excited another, and it was very evident if any good was to be obtained it must be reached by a more careful study of the law of vibrations in connection with individuals. In carrying out the strictly scientific idea Dr. Dent selected eighteen cases in which the individual treatment was followed for two months with five seances each week. The result was so satisfactory that its great value when scientifically administered was fully established. Of the patients selected, several entirely recovered and the majority were greatly improved.

Dr. Dent, in speaking of his experiments, said: "It must be remembered that a majority of our patients have never had the advantage of an ordinary education and much less those of a musical one, but in the face of this handicap I feel justified in saying that many of them have recovered as a direct result of the musical treatment. Of course other treatment is not suspended while this is going on. The human voice in song and reading has produced the best effect. We arranged to have a good singer come to the hospital on a certain day and the general enjoyment this gives is very marked. While many cases may never derive any great benefit from the music, it is appreciated by all; the acute cases for purposes of cure and the chronic ones for the enjoyment it brings temporarily."

THE APOTHEOSIS OF HORACE WELLS.

A RECENT paragraph in the *Boston Medical and Surgical Journal* runs as follows: "A memorial service to Dr. Horace Wells as the discoverer of ether was held at the Center Church, at Hartford, Conn., last Sunday. A memorial window to him and to his wife was placed, and the medical and dental societies of Hartford attended the ceremony. There is a statue to Dr. Wells in Bushnell Park, Hartford." This announcement involves an assertion which, from such a source, is simply astounding. Whatever credit may justly attach to the unfortunate Wells in connection with the introduction of anesthesia, most certainly he was not "the discoverer of ether," which was well known to chemists at least a century before his birth. And as to his having been the first to make use of it for abolishing the pain of operations, it is equally indisputable that he began by taking up Sir Humphrey Davy's original suggestion with regard to "laughing gas," and obstinately persisted in confining his efforts to that substance alone, without having either knowledge or skill enough to invent a suitable apparatus for its administration. The result was that his first attempt at a public demonstration—in that same amphitheatre which was the scene of Morton's triumph a few weeks later—ended in a wretched fiasco, and he was driven forth to insanity and suicide. All that Horace Wells ever did with anesthetic ether was to reject it, as "the base Indian threw a pearl away richer than all his tribe." Really, in view of the claim now set up by his Hartford admirers and backed by such an elaborate monumental record, it does seem as though Sir Robert Walpole's cynical dictum was perfectly correct: "Don't read history to me, for that I know is false."

Since writing the above, we have encountered in the *Yale Medical Journal* a passing reference—quite as unaccountable as the statement just commented on—to "the discovery of the anesthetic properties of chloroform, by Horace Wells."

OXYGEN FOR MILK FEVER IN COWS.

ACCORDING to the *Journal D'Agriculture Pratique*, as quoted in *Hoard's Dairyman*, a novel method of treating milk fever, or parturient apoplexy, has been discovered and practiced with success by M. Knusel, a veterinarian of Lucerne. It consists of the injection of pure oxygen into the udder. Unsatisfactory results from his previous employment of another recently introduced remedy—potassium iodide—led M. Knusel to try the oxygen treatment, which, when he wrote his report, he had applied in twenty-two cases. Some of these cows were almost at their last gasp, prostrated, insensible, and with labored respiration, accelerated pulse and paralyzed tongue. Yet in from 30 to 60 minutes after the injection they had so far recovered as to seek for food. Not one of them died. From six to ten litres of oxygen were injected, the gas being compressed to twenty-five atmospheres in an apparatus obtained from the firm of Hauptner, of Berlin, which contains a valve for regulating the pressure. The procedure was as follows: A teat having been washed and disinfected, the teat probe was introduced, and the tap slowly opened to release the oxygen. When two quarters had been filled an assistant compressed the two teats, and by massage the gas was distributed through the glandular tissues. This operation was repeated with the other two quarters, the whole work occupying only about ten minutes. Gradually the treated cow showed signs of recovery, and soon got up on her feet. In two instances a relapse occurred, owing to the cows having been milked too soon, but a fresh injection of oxygen quickly restored them. These were the only accidents in the twenty-two cases. M. Knusel believes that if his treatment is applied soon enough, it will be successful in all cases. He suggests, as an explanation of the effectiveness of oxygen, that the poison formed in the udder and passed into the general circulation of the animal may be produced by microorganisms which are anaerobic, and therefore unable to live in the presence of oxygen.

WHY USE SPECTACLES?

WITH most persons there is an epoch in life when the eyes become slightly flattened, says Health. It arises, probably, from a diminished activity of the secreting vessels; the consequence is that the globe is not kept quite as completely distended with fluids as in youth and middle age. There is thus an elongated axis of vision. A book is held further off to be read; finally becoming more flattened by the same inactivity within, the difficulty is met by putting on convex glasses; this is the waning vision of man. If, however, when that advancing imperfection is first realized, the individual persists in the attempt to keep the book in the old focus of vision, even if he reads under the perplexing disadvantages, never relaxing, but perseveringly proceeding just as he did when his eyes were in the meridian of their perfection, the slack vessels will at last come up to his assistance and the original focal distance will be re-established. This statement will unquestionably be combated energetically by those who use glasses; but it will be a waste of forensic power, because the fact is established beyond cavil. We do not pretend it will be successful in every instance; but generally, if glasses are once resorted to, then the opportunity of doing good without them is forever lost. Very aged men may be noticed reading fine print; and ladies, too, by scores, who resisted glasses at the age of life referred to, who enjoy all the comforts of distinct vision; and they will, until, like the chaise, every stick in the vehicle falls to pieces at the same time. Therefore, begin with a firm resolution never to use glasses of any kind for reading or writing. The ancients knew nothing about such contrivances; if they had there would have been poor eyes in abundance and oculists to meet the emergency. Cicero never complained of imperfect vision at the age of sixty-three years; he even wrote his last letter by torchlight on the eve of being put to death by the waiting soldiers. Humboldt died at ninety two, having never been embarrassed by any kind of glasses. John Q. Adams, illustrious for scholarship, at a ripe old age saw without them. Indeed, it would be no laborious enterprise to collect a catalogue of names in the chronicle of literary fame of men and women who were independent of glasses; and just to see the thousands of young men and women ruining their eyes because it is fashionable to wear them!

BIBLIOGRAPHICAL.

Progressive Medicine. Fifth Annual Series. Volume II, June, 1903. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 427 pages, with 46 illustrations. Per volume, $2.50, by express prepaid. Per annum, in four cloth-bound volumes, $10.00. Lea Brothers & Co., Publishers, Philadelphia and New York.

This volume which is one of the best of the series is divided into three parts, 122 pages being given to Surgery of the Abdomen, including Hernia, by Dr. William B. Coley; 100 pages to Gynecology, by Dr. John G. Clark; 112 pages to Diseases of the Blood and Ductless Glands, the Hemorrhagic Diseases, Metabolic Diseases by Dr. Alfred Stengel and 80 pages to Ophthalmology by Dr. Edward Jackson.

Dr. Coley's discussion of the Surgery of the Abdomen will be found exceedingly interesting, instructive and of great value. The discussion of the operative treatment of Hernia shows how the radical cure of that affection has been placed upon a scientific basis. Dr. Clark discusses the various phases of Cancer of the Uterus, its etiology, clinical manifestation and treatment and takes up the various affections of the Abdominal and Pelvic Viscera and points out the relation of diseases of the Vermiform Appendix to pathological conditions of other abdominal or pelvic organs.

Dr. Stengel's section on Diseases of the Blood includes also morbid conditions of the Ductless Glands and disorders of metabolism. Not the least valuable part of this section is the discussion of the effect of various poisons upon the constitution of the blood and of its changes in infectious diseases. The section of Ophthalmology by Dr. Edward Jackson will be found of great practical value, not only to the surgeon but to the general physician.

Organic Nervous Diseases, By M. Allen Starr, M.D., Ph.D., LL.D., illustrated with 275 engravings in the text and 26 plates in colors and monochrome. Lea Brothers & Co., New York and Philadelphia. 1903.

We cannot give a better idea of the general scope of the work than by extracts from the author's preface. "The investigations and discoveries in neurology during the past ten years have made the diagnosis of nervous diseases less difficult and more exact so that it is now possible to trace any symptom presented by a patient to some disturbance of function in a definite nerve center or nerve tract. Accuracy of diagnosis has led in turn to precision in treatment and especially to the application of surgical measures for the relief of diseases formerly considered incurable. Upon the mass of pathological and clinical material accumulated during twenty years of practice the statements presented in this book are based. It has been my object to make clear both to students and practitioners the principles upon which the location and diagnosis of nervous diseases rest, and to put before them in a definite manner the appropriate medical and surgical treatment and its results."

Dr. Starr's ripe scholarship, his wide experience and his eminence as an alienist are sufficient assurance that the work which embodies the experience of a large portion of his professional life has been well accomplished and will prove of great practical value.

A Text-book of Minor Surgery, Including Bandaging. By Newman T. B. Nobles, M.D., Professor of Surgery at the Cleveland Homoeopathic Medical College, Attending Surgeon to the Cleveland City Hospital, the Cleveland Homoeopathic Hospital, the East End Hospital, and Children's Hospital. 325 pages. Cloth, $2.50. Postage, 15 cents. Boericke & Tafel, Philadelphia. 1903.

Dr. Nobles has given the profession one of the most complete and satisfactory books on minor surgery now before the public. Particular attention has been given to the aseptic and anti-septic methods of treating wounds. In the preparation of the operating room, the administration of anesthetics and in all the details of modern and surgical technique, nothing is left to be desired.

CORRESPONDENCE.

THE PRINCIPLES OF ETHICS OF THE AMERICAN MEDICAL ASSOCIATION.

AT the latest annual meeting of the A. M. A., the old code of ethics has been revised, shorn of its explicit penalties, and reduced to a much more fitting position of "Principles of Ethics." This step, while already anticipated in actual practice, is important, as leading to the reunion of the medical profession in New York State, and as marking the fact that medicine is outgrowing sectarianism and outgrowing the desire to foster it by opposition.

The Principles of Ethics are divided into three chapters, dealing respectively, with the relation of the medical profession to patients, to physicians, and to the public. If a general criticism is to be made, we would say that the Principles are lacking in definite applicability to numerous live issues, that they give the impression of triviality by unnecessarily entering into minutie and that they express what the cynic will designate as platitudes. For instance, we have never known a physician who could so unite "tenderness, cheerfulness and firmness" as to "inspire all sufferers with gratitude, respect and confidence." It would seem, also, that the matter of unnecessary visits and of making periodic calls at the same hour might better be omitted from an enunciation of fundamental principles. Three sections are devoted to the demeanor of the physician attending cases in which the prognosis is grave, without clearing up the problem recently discussed in these columns, as to whether the truth should be told to the patient and his friends though, as we read these sections, they rather seem to favor "jollying" the patient. On the whole we wish the "Principles" had been cut down to a terse enumeration of professional duties, instead of preserving the nature of a homily.

In no carping spirit, but because so important a document should call forth comment and should be amended in accordance with the general concensus of professional opinion, thus elicited, we may be pardoned for certain explicit criticisms. Article 1 of

Chapter II., of the duties in regard to the support of professional character, should mention the duty of proper preparation for practice, both as applied to the individual and to those entrusted with or voluntarily assuming charge over the education of students.

In the same article we read "The physician . . . should entertain a due respect for those seniors who, by their labors, have contributed to its (the profession's) advancemenet." A statement of this sort is objectionable from several points of view: it savors strongly of establishing a professional aristocracy, if the word seniors is taken in one sense; while it hints at a tendency toward disrespect for age, of which the medical profession is certainly not guilty. Moreover, it is a matter of history that, at any given time and, especially the present, the men who had done most toward advancing the profession of medicine, are very far from being seniors in the literal sense, so that it is difficult to understand just what the purport of the section is.

There is no objection to emphasizing the value of fraternal spirit and organized co-operation but is it just the thing, in a fundamental statement of principles of the greatest antiquity—except so far as they have been modified by modern development—to mention explicitly the duty of being a member of the American Medical Association and of joining or organizing branches of it? Even the established churches scarcely go so far in their creeds, and it is at least imaginable that any voluntary, non-official society may be so manipulated as to depart from its own principles. It is one thing to hitch our wagon to a star, quite another to insist that the star be hitched to the wagon.

The Principles of Ethics follow the Code in condemning the patenting of articles for professional use. This undoubtedly represents the prevailing sentiment but, as we have elsewhere pointed out, there is another side to the question. As Dr. Murphy has publicly stated, lives have been lost because he did not patent, and, therefore, could not control, the proper manufacture of his intestinal button. So long as a patented article is honestly made and sold at a reasonable price, it does not seem to us that there is anything particularly unethical in allowing the inventor to have some substantial reward for his skill, rather than in giving this reward to an instrument maker who has done nothing to earn it. The ideal plan, in our estimation, is to patent every medical invention of any importance and thus to secure the control of quality and price in the interests of the profession, but to insure against personal motives by having the patent taken by some regularly constituted committee of the organized profession.

Article III. of the same chapter, follows the old code in regard to consultations. Section 9, "All discussions in consultation should be held as confidential. Neither by words nor by manner, should any of the participants assert or intimate that any part of the treatment pursued did not receive his assent," is proper in its literal interpretation but open to question in its ultimate significance. Especially in regard to cases in which the diagnosis is in doubt and in which one conception of the case suggests surgical intervention, it often happens that all agree upon the wisdom of presenting to the patient or his friends the dilemma in which the consultants find themselves. The suggestion of the Principlese of Ethics, to call in another consultant, as an arbiter, is impracticable, partly on account of the expense, partly because such a course admits but does not candidly state that a disagreement has occurred, mainly because in numerous cases, no amount of personal opinions can decide a doubtful diagnosis and because the only honest way is to state the condition to the family.

The principal criticism on this part of the Principles of Ethics, however, is that it is two generations behind the times so far as the matter of consultations is concerned. A consultation is no longer a council of war held by men of the same training, in which questions are to be settled by a majority vote or by seniority. In the vast majority of cases, the consultant is now a specialist, either by actual limitation of practice or by some particular form of preparation and, indeed, it is no longer considered just to the patient merely to secure the combined judgment of two men of similar training and practice, or to summon a consultant simply on account of seniority or popular reputation. The Principles of Ethics make a serious omission in failing to recognize the relations of general practitioner and specialist and in ignoring the consultation "by reference," in which the attendant and consultant do not attempt to meet at the patient's bedside.

In the next article, dealing with the duties of physicians in cases of interference, the principle of first come, first to serve, is clearly enunciated, with regard to emergent cases to which a number of physicians are summoned by different messengers. Here, too, common sense, which is always in accord with the best ethics, dictates that the nature of the practice of the different physicians, should be considered rather than a few minutes' priority. If we are to assume that the case is a prize in a contest of speed, common fairness ought to designate handicaps in accordance with distance, etc. Besides, this is the proper place in the Principles of Ethics to take notice of the practices of some hospitals in regard to ambulance abuses.

In the chapter on the duties of the physician to the public it is stated that "It is the duty of the physician to recognize and, by legitimate patronage, to promote the profession of pharmacy." The support of pharmacists who prescribe over the counter, or who dispense deteriorated or sophisticated drugs or who substitute, is disclaimed. With the general purport of this section, we are heartily in sympathy, yet it seems that it should be presented in more general terms. There is nothing unethical in the physician's assuming any task comprised in the most general conception of medicine, so long as he can perform it satisfactorily and so long as he does not claim to limit his practice. The vital principle of ethics aimed at in this section—and it seems to us that the shot barely touches the rim of the target—is that the physician should not undertake a task for which he is not fitted and for which special departments exist. The physician certainly owes a duty to the profession of pharmacy and the term patronage is most unfortunately used in this connection. But we see no reason why one form of specialization should be singled out for mention. The physician owes the same duty to the dentist, perhaps to the nurse, certainly also to the ophthalmologist and to other specialists within the medical profession. But to imply that the general practitioner must not do

this or that function of the healing art, simply because it is part of the work of a specialist, is not in accordance with sound theory.

The section is lamentably weak in regard to the ethical responsibility of the other party. "Any pharmacist who, although educated in his own profession, is not a qualified physician and who assumes to prescribe for the sick, ought not to receive such countenance and support," certainly implies that the physician who goes into the drug business ought to receive our "patronage" as a druggist and at the same time, be free to continue to practice medicine. We hold the contrary view that, when a physician takes up any special department of medical work whatever, he should cease to be a general practitioner and confine himself to his special department, both because he cannot carry on two lines of work with justice to his patients and because he has no ethical right to ask support—"patronage"—from those with whom he is competing on their own ground. This section of the Principles is silent regarding the ethical practice of the pharmacist. It is a poor rule that does not work both ways. We maintain that we are under no obligation to support or patronize a druggist who flaunts patent medicines in the faces of patients whom we may send with a prescription. On the contrary, if there is any ethical obligation at all, in this matter, it is to withdraw our support from such pharmacists. We confess that we do send prescriptions to such but it is only as a matter of expediency and necessity. We can imagine practicing medicine in some remote community and sending patients to a traveling optician or a pile quack, for precisely the same reasons.

We would most respectfully suggest that this section in behalf of pharmacy, should be broadened to include a general description of the duty of the physician toward all of the ancillary professions and of that of the general practitioner toward the specialist, postulating in equally general terms, the duty of the second party to adhere to the essential principles of ethics governing professional conduct.

While we have freely criticized the Principles of Ethics in their present form, we have done so in no spirit of hostility. It probably will be found impossible to express exactly the ethical principles which control the medical profession, just as it is impossible to codify a system of morals or to lay down rules for being a gentleman. The important fact is that, in dismissing the code of ethics as a code and in eliminating certain narrow restrictions from its successor, the American Medical Association has placed itself abreast of the times and has invited all right-minded physicians to unite in the interests of professional solidarity. The Principles of Ethics must be considered a placebo for the qualms of the more conservative. We would like to see them amended, simplified and perfected but, after all, if one has his ethics in his heart, it is unimportant whether he can put them into words, that may stand against all critics.

A. L. BENEDICT, M. D.

Buffalo, N. Y., July, 1903.

—While entertaining thirty children at his home in New York by singing the intermezzo from "Cavalleria Rusticana," Oscar Muller, a five-year-old vocal prodigy, fell unconscious to the floor and died almost immediately. He ruptured a blood vessel while trying to maintain a high note.

THE OTHER MEN.

After all what was it all about?

We do not care to place ourselves in the unenviable position of being regarded as detectives, not even where justice and the interests of science is the motive, but we do not believe comparisons are always odious; in fact, they can be made to serve a good purpose.

The recent visit of a celebrated European orthopedist gave rise to much ebulition in the lay and professional press. In the end the effect was wholesome, for while it gave rise to an exhibition to the visitors of the most generous side of American social medical life, and showed us—and that by a single demonstration—that while an immense wealth had so assisted our industry, and mechanical aptitudes that we have principally in the competition been able to surpass Europe by a fulfillment of its suggestions on a grander scale, there is still something to be learned from abroad, and that mechanical genius has not its only habitat in our New England.

Fortune favored the genius from central Europe, for as chance would have it, a millionaire patron had a crippled child. Some other children profited because coincidentally they had the same or similar ailments. All honor to the surgeon and the generous patron.

However, the operation is, comparatively speaking, a daily occurrence at many European clinics. In this country cengenital luxations of the hip is on the whole a comparatively rare occurrence.

Few physicians in general practice are likely to see a case in a lifetime.

In comparison with many other deformities, and deformity producing diseases, it is dangerous neither to life, nor when single is it a bad deformity.

In the end the greatest achievements in medical progress are those which afford the greatest good to the greatest number.

If Sayre were alive to-day and had to travel around the country and put his "jury mast," which has an honored place at many German clinics, if not more broadly stated European ones, on every neck that needs one, he would indeed merit our sympathy. Yet there are fewer cases of congenital hip dislocation at large than cases of diseased clinical vertebra.

Had we invited Helmholtz over to examine every retina which his ophthalmoscope made accessible what would have been the end of it; yet how many owe him vision, how many cases of Bright's disease has he made possible to cure by an early diagnosis?

Graefe, with his operations for cataract, brought daylight again to many a noble brain and darkened soul, and in this day, when the "pen is mightier than the sword," but where a luxated hip is no hindrance to a brain that may control a corporation or preside at a cabinet meeting, the "mild power" of Graefe, who died more or less a marytr to his calling, is inestimable in its field of influence.

Of late, many a bone is properly healed or its proper resetting enabled by the work of Röntgen, yet his name is oft buried under the favorite algebra's designation for the unknown quantity.

The blind probing that cost Garfield his life is obviated by the same genius' work, and many a veteran need no longer carry his "ball of lead" because it can now be intelligently extracted.

Many a pension may be saved the government by

Röntgen's comprehensive work, which has, in addition, embraced partially within its sphere some forms of one of the dreadest scourges of humanity—cancer. in many of its forms.

Innumerable lives have been made valuable that were otherwise doomed to agony, by the numerous forms of intestinal anastomers and resections, and gastro-enterostomies.

Billroth's resection, which Schlatter has since so brilliantly surpassed by complete gastrotomy, might also be regarded as an exhibition of skill and certainly of far reaching charity in effect.

The hardly less terrible problem—cancer of the rectum—has recently, by the work of Kraske, been illuminated by successful operations.

The brilliant work in electro-instrumentation, while less dramatic and gladiatoral than Lorenz's performances, is certainly of wider application.

The digestive tract is made accurately examinable from the north to the plains by the electro-illumination of esophagoscopy, gastroscopy and gastrodiaphanie.

The magnificent work of Leiters in cystoscopy and catheterization of the ureters has done for the genitourinary specialist what Helmholtz did for the ophthalmologist brain specialist and kidney specialist. The accidental extirpation of the only kidney a patient possesses, as happened more than once to one of our greatest, is no longer excusable since the existence of cystoscopy and ureteral catherization.

The larger bronchi are now as accessible to inspection by bronchoscopy of *—— as was formerly the larynx and trachea. A foreign body can be extracted from a bronchus, thus obviating partial suffocation or aspiration pneumonia or even pulmonary gangrene.

The intubation of O'Dwyer, while no longer a surgical panacea for diphtheria, has lightened the hearts of more mothers than is possible by the numerical limitation of the Lorenz method for hip dislocations.

The old man, too, has found a friend in Bottini, but as usual Bottini's fame has lessened by the overenthusiastic application of his method. A fate that has befallen more than one European idea when transplanted to our own over-fertile soil and permitted to become a dangerous weapon in the hands of misguided and over-enthusiastic disciples who abuse science as a catch-penny device.

H. O. SOMMER, M. D.

*Killian, I think, was the inventor.

—The premature death of Dr. Blacker, who cured King Edward of a rodent ulcer, was caused, there appears reason to believe, by X-ray dermatitis. While manipulating the apparatus he is said to have received a severe burn on one of his fingers; the dermatitis gradually spread up the arm, and in its track malignant growths developed, first near the elbow and afterwards in the axilla, finally involving the whole of the shoulder. Amputation at the shoulder joint was contemplated, but the rapid extension of the disease deterred Sir Frederick Treves from attempting operative intervention. This is not the only case in which the origin of malignant disease has been traced to the X-rays.

RETROSPECTIVE THERAPEUTICS.

Control of Mouth-Breathing at Night.—Dr. Stewart W. Tufts writes in *American Medicine* (Jan. 31, 1903), that for obtaining the control of mouth-breathing at night, he believes the simplest possible plan is to stick a piece of silk isinglass court plaster, about ⅜ by 1¼ inches, across the closed lips. For a person with a moustache or beard it will adhere strongly enough to the edges of the lips. He finds this device as popular among patients as headgears were objectionable. The nose is a most efficient germ filter, and in consideration of the immense mortality from lung diseases, the necessity of using it as such becomes apparent. Yet 70 per cent. of people are mouth-breathers at night. The correction of this habit he regards as one of the most important measures of preventive medicine, and also as one of the most efficient measures of physiologic therapeutics. His general results in the treatment of respiratory diseases are better now than before the use of the above method, and his patients who used to have a laryngitis or bronchitis following acute rhinitis are now enabled to avoid such sequels; he has more control of asthma and hay fever. The application of this idea is of large value to singers and speakers, who should be observed while asleep to make sure of their proper breathing. In investigating mouth-breathers do not give credence to a denial, but direct the patient to observe carefully the condition of the nose, throat, and mouth upon awakening, or as a final test let him be observed while asleep.

Vaccinium Myrtillus in Typhoid Fever.—M. M. Bernstein believes (*Brit. Med. Journal*) that the fruit of the bilberry, Vaccinium myrtillus, is a specific remedy capable of meeting all the indications of typhoid fever in the intestines during the disease. He first employed bilberries as an intestinal astringent, and found that the fruit possesses a prompt antifermentative action. The berries are not poisonous and are pleasant to the taste. The efficiency of the remedy is not impaired either by the acid liquid of the stomach or the alkaline contents of the intestines. The juice of the berries has a distinct bactericidal action upon the typhoid bacillus, killing it in about thirty-six hours. In typhoid fever the bilberry is said to keep the intestines aseptic and to prevent reabsorption and reinfection. It is also said to be of great value in dysentery, both acute and chronic.

Beer-Yeast in Otology.—That beer-yeast, administered by mouth, exercises a specific effect upon pyogenic organisms in suppurative conditions is not to be questioned, writes L. Sune y Molist (*Rev. Cien. Méd. de Barcelona*, XXVIII, No. 7, 1902), who has used a special preparation of that substance, compounded from the formula of Dr. Fita, and known as "cerevisina-fita," in otitis media, mastoiditis, and otitis externa furunculosa, with surprisingly good results: a teaspoonful being given every four hours. The pain subsided and swelling was markedly decreased upon the day following administration of this remedy in a case of mastoiditis; and by the fourth day the last remnant of inflammation had disappeared. This method of treatment was equally successful in a case of acute suppurative otitis with perforation of the tympanum and involvement of the mastoid cells. Local treatment with antiseptics had been used for

three days without avail, when it was decided to essay the effect of Cerevisina, which gave immediate relief; and the patient was completely restored to health within less than a week.

Lactic Acid Internally for Pruritus.—M. De Castle (*Jour. de Méd. et de Chir. Prat.*), on administering lactic acid to a child, the victim of generalized pruritus, to cure its digestive troubles, found that the pruritus rapidly disappeared. Since then he has given the remedy for pruritus to many children, and also in cases of senile pruritus, with great success. In one case of an obese woman with vulvar pruritus of four years' standing, but not glycosuric, a fortnight's treatment caused its disappearance, and the patient had had no return two years later. For little children, the dose is from 10 to 16 drops of a one-per-cent. solution in divided doses through the 24 hours. This can be raised when the remedy is well borne. For adults a daily dose of 1 gm. (15 drops), well diluted.

Incipient Pulmonary Tuberculosis.—Incipient tuberculosis is curable if the disease is diagnosed early. Therefore, the means and methods by which we are enabled to arrive at an early diagnosis require particular attention. Such diagnosis rests upon a multitude of details and observations. Many cases of tuberculosis are passed by able men who would undoubtedly diagnose them were their suspicions aroused, but they allow themselves to be diverted, and a diagnosis of some similar disorder allows precious time to elapse. The suspicious symptoms, arranged in the order of their prominence are as follows:

1. **Cough.**—A slight, hacking, persistent cough, which can be referred to the larynx or upper trachea. It is worse at night or upon lying down. There is little or no expectoration.

2. **A Failing Appetite.**—There is a repugnance for fatty foods, and some degree of indigestion.

3. **Loss of Weight.**—Patient is a few pounds below his average weight.

4. **Sleep Sweats.**—Upon lying down, day or night, the patient awakes with the neck and upper chest bathed in a warm or cold perspiration.

5. **Accelerated Pulse.**—A pulse of 90 to 100, which is quick, irritable, and ill-sustained.

6. **Elevation of Temperature.**—This is an unobtrusive symptom, but is of the highest importance. When a case of beginning tuberculosis is suspected, a temperature record at 2.30 p. m. on several successive days should be insisted upon. A temperature elevation of one degree F. is a symptom that must be accounted for absolutely by some other condition, or tuberculosis must be suspected and confirmatory symptoms searched for.

The Alleged Medicinal Properties of the Husk of the Coffee Bean.—About a year ago, says the *Lancet* for October 4, 1902, Dr. L. Restrepo, of Medellin, the capital of the Department of Antioquia, in the Republic of Colombia, South America, convinced himself that the husk of the coffee bean was of great utility in the treatment of several diseases, and that in malaria it sometimes succeeded where quinine had failed. Copious details of Dr. Restrepo's observations were forwarded by the British Legation in Bogota to the proper authorities in London—of course, without anything of the nature of official endorsement. Dr. Restrepo at first used an infusion made with 45 grammes of crushed coffee (in the husk) and 400 grammes (about 14 fluid ounces) of water. This was boiled for 5 minutes, strained, and taken in one day in six doses. With this medicine he successfully treated five patients of whom three suffered respectively from intermittent malarial fever, chronic malarial fever, and pernicious fever, and two suffered from enteric colic or chronic dysentery of malarial origin. Before taking this infusion these patients "had all been declared fatal cases, given up by well-known doctors of good reputation." He afterwards made the infusion with 30 grammes of husk, the other details of preparation and the dose being as before. With this he says he has treated hundreds of cases, not one patient has died, and a cure has resulted in every instance.

Chlorosis, Marriage and Orchitic Extract.—Dr. W. Dufougeré (*Gaz. Méd. de Nantes*) says that chlorosis is due to a self-intoxication of menstrual origin, and to accumulation in the blood of toxic principles which are not destroyed by the internal secretion of the ovary. By re-establishing this internal secretion chlorosis is caused to disappear. Marriage influences this secretion and restores it if it has ceased. This re-establishment of the secretion is due to the absorption during coition of a certain specific principle which acts directly on the ovary and stimulates it out of its torpor. Chlorosis, therefore, so far from being an impediment to marriage, is quite the reverse. The injection of "orchitic liquid" by chlorotics will also establish this internal secretion. Its therapeutic action is explained by its physiologic character, and agrees perfectly with the effect of marriage on chlorosis.

Ammonium Chloride in Locomotor Ataxia.—Dr. Given Campbell, of St. Louis, reports in the *St. Louis Medical Review* that in a number of cases he has witnessed relief of the fulgurant pains by the use of aluminum chloride in ½-grain doses three time a day. To a number of patients he has given this amount for periods varying from a year to less with absolutely no disturbance of the digestion or general health. On the contrary, the immunity from the pains enabled them greatly to improve in general health, and this improvement reacted favorably on the other symptoms of the locomotor ataxia. In neuralgia marked by a strong paroxysmal element he has occasionally found it of much benefit.

Diet in Chronic Endocarditis of Children.—Thompson, in *Pract. Dietetics*, states that children who have chronic valvular disease or enlargement of the heart, but who are not strictly confined to bed, should have their habits of eating closely guarded. They should eat slowly and moderately and at regular intervals, the heavy meal should be at noon, and a light supper two hours before retiring. Animal food is as a rule better for them than vegetables, but they may be allowed fresh vegetables, such as spinach, tomatoes or stewed celery. Rice and macaroni may be given. Bread should be eaten only when dry or toasted. Sweets should be omitted from the list, except that very rarely jam or preserves may be given. Sweets are liable to cause flatulency and palpitation and excite the heart's action and produce unnecessary strain.

Dietetic Value of the Oyster.—A chemical investigation of the "native" oyster undertaken in the *Lancet* Laboratory resulted in showing that the most expensive oyster contains the highest proportion of solid

matter and is the heaviest, and the cheapest contains the least and weighs the least. On account of the contained glycogen, oysters have been regarded as unsuitable for diabetics; but the above analysis showed too small an amount to be injurious. A further examination showed the presence of glycerophosphoric compounds, which are now used to improve the nutrition of the nervous system. The entire results show that the oyster contains all classes of nutritive material and also that they exist for the most part in a readily assimilable form. It was found that the best solvent of the oyster is cold water. Boiled oysters are tough and indigestible and yie scarcely any material to cold water. Generally speaking, about four-fifths of the oyster consists of water; a fact which is very nearly true of beef and mutton. The former contains about 75 per cent. of water and the latter a little less in the moderately fat portions. Beef and mutton are in some cases less appetizing than oysters, and are consequently less advantageous to use in some invalid dietaries.

The "Dry Meal" Theory.—Dr. J. W. Carhart, in the *Texas Courier-Record of Medicine* for January, says that from time immemorial, so far as he knows, the dogmatic teaching has been that fluids taken with meals are injurious. The less taken at such times, therefore, the better. This dietetic dogma, in his opinion, has its basis in theory only. The sole appeal to fact for its support that he has ever known has been to the habits of wild and domestic animals. But wild animals drink while feeding, where they have opportunity—which is not frequent—and they generally drink as soon thereafter as they can conveniently reach a watering place. Domestic animals are too generally excluded from the water-trough or cooling stream while feeding. If left to themselves and amply provided for, they will frequently drink while eating. To fatten well, they must be allowed their liberty in this respect.

If a properly constructed thermometer is passed into an empty stomach and again after the liberal ingestion of food, the reading will show a considerable rise of temperature immediately after partaking of a hearty dry meal. An empty stomach is quiescent. On the ingestion of food activity begins and activity increases temperature. This develops thirst, which may become so intolerable as to be positively painful, actually interfering with digestion and rendering progress in the meal impossible. Every horseman knows that a thirsty horse will frequently refuse his feed until he has slaked his thirst.

Alcohol as Aliment.—While London is making an effort to stamp out alcoholism by special legislation, Paris is discussing the value of alcohol as food. The question is raised by Dr. Duclaux, director of the Pasteur Institute and member of the Academie de Médecine, who states that not only is alcohol food like bread, meat and sugar, but, for equal weights, contains more vital energy than any of these. Dr. Duclaux deprecates excess in alcohol as in everything, but thinks an average of a quart of wine daily is good for every active person.

Such conclusions have a rapid circulation, and a leading chief of a factory has stated that his employees who had been convinced by the anti-alcoholic crusade of the harmfulness of alcohol, now fortified by the dictates of science, are again frequenting the bars and saloons.

As the editor of the *Medical Age* remarks, it would appear to be Atwater's work, which has been the disturbing factor in this matter. The word "food" is the one which has passed with magical suggestiveness and upset conclusions previously arrived at in good faith. Atwater's experiments were concerned with the number of calories liberated by healthy men on a diet excluding alcohol. He found that alcohol furnished these calories, or as Duclaux states the fact: "In the alimentary régime of three heavy men it has been possible without inconvenience to replace butter, vegetables, and other analogous foods by alcohol in the form of wine or spirit."

Alcohol weight for weight can liberate more calories than other alimentary substances. This is the point which the public appreciates. In travel or under strain the substance which at least weight will furnish the greatest amount of energy is the one possessing obvious advantages. The calculation is simple: To liberate 100 calories it needs 24 grammes of sugar, 28 grammes of grain, 150 grammes of potatoes, or 150 grammes of milk. This can be done by 17 grammes of alcohol. This, however, is absolute alcohol which would burn and injure the digestive organs, so the traveler would have to provide for the dilution of the substance he carries. Even then alcohol would not possess the merit of fat. Twelve grammes of butter would furnish the energy of 17 grammes of alcohol. Then, too, when we consider the bulk of alcohol, even as brandy, which is 55 per cent. absolute spirit, 24 grammes of sugar would be an equivalent in energy-producing results; so the traveler might consider this as the German army does, which simply tells the soldier to put a few lumps of sugar in his pocket, and this with excellent results.

The whole question, however, is something more than one of producing calories. If alcohol is a food, it is so only in this sense of producing calories, and it is costly and dangerous. If its use were suppressed we might replace it by other substances, and if we took at our meals a little more butter and sugar we could undoubtedly completely abandon the use of alcoholic beverages.

The Diet in Lithemia.—In the *Bulletin Med.* (Dec. 10, 1902), Pascault describes the correct diet for a gouty or lithemic patient. For breakfast he allows milk, sugar and bread, butter and salt; for lunch, green vegetables, potatoes or other farinaceous food, fresh fruit, bread, butter, salt, water and coffee, with sugar; and for supper, soup with milk, bread, green vegetables, stewed fruit, water, bread, butter and salt, all in exactly weighed quantities. Thus no nitrogenous food is given, and but little albumin at first. Later eggs and a little meat may replace the starches, and cheese may be added. All food should be well masticated, and no surplus should be taken.

Overfeeding and Cancer.—Oldfield urges in the *British Medical Journal* that the overfeeding of animals and the retention in their tissues of the decomposition products make the eating of such animals as food productive of an unstable cell equilibrium which foreruns the cancer incidence, and that the same thing applies to vegetables, though in a lesser degree. During his late tour through India he found cancer practically absent from all areas where vegetation was sparse and where the animals used for food had lived a hardy existence, but in those regions marked by ranker vegetation and where the animals were more highly foddered it was more prevalent.

THE CLINIQUE.

THE AVERAGE "WEAK HEART."

THERE seems to be something more noticeable to the owner about a weak heart than a weak head. The possessor of a weak head, as a rule, finds that it bothers him very little; in fact, it is generally a source of great comfort to him, such being the wise provision of nature. Possibly lack of brains also is too common a complaint to attract much attention from the world at large. When it comes to the average weak heart, however, it insists on being evident on all occasions; if the owner rushes for a street car at unusual speed, he is given a turn of healthlessness that may bother him all day. If he climbs several unaccustomed flights of stairs, again he is warned of his weak pumping organ. This brings him in time to the doctor with the story, that he fears he has heart disease. But genuine weak hearts are not as common as we might suppose—many a smoker has an instability of that organ due to tobacco which has not really affected its strength as the symptoms would point out. Many a dyspeptic blames it on his heart; many a tight-lacing woman ascribes her healthlessness to this much-maligned organ. If we can relieve the dyspepsia, stop the excessive smoking or tight-lacing, the weak heart disappears. Again, even if the heart is really weak it may be only a symptom of general lack of tone which may be easily removed. Christison, the well-known English lecturer, when on the subject of weak hearts used to tell his students: "Gentlemen, the best tonic for weak hearts is a good brisk walk." The muscles of the average city bred man are flabby because of lack of exercise, hence his heart muscles are weak. Exercise those muscles, eliminate the products of over-eating or rich feeding, fill the body with good blood from lungs filled with fine ozone and the heart will improve. Should there be no actual organic disease of the heart, plenty of good walking, with, if possible, some light gymnastic exercise, will dispel breathlessness, and heart weakness. It also removes the tendency to subsequent ills such as gout, rheumatism, etc., which may fall on the patient in his enfeebled state.

ADDISON'S DISEASE.

THERE was recently reported in the newspapers the case of a woman who died after only thirty-six hours' illness, apparently with symptoms of this disease. Her skin previously fair was the bronzed coppery color characteristic of this disease. Unfortunately an autopsy in the case was refused, hence it was impossible to verify the diagnosis. The woman was taken violently ill in a trolley car and the discoloration rapidly appeared together with inflammatory symptoms of the whole gastro intestinal tract.

Another interesting case of this disease is the following:

This patient is a man aged 40, married. His parents lived to old age, dying of apoplexy; his brothers and sisters are living and comparatively well; he has had the usual diseases of childhood. Since adolescence this man had typhoid fever. As far as we can determine his present trouble made its appearance about eighteen months ago. He found that he became easily fatigued; he was very tired after a day's work, and on rising in the morning he experienced a lack of energy, which was both physical and mental; he noticed that this debility increased; feeble pulse, faintness on the slightest exertion, loss of appetite, pain in the epigastrium, shooting also between the scapulae, and progressive emaciation, followed in this order. He has been treated by tonics and other measures calculated to increase his strength and restore his health, but with no markedly beneficial effect. Six months later his physicians noticed that he was growing darker in color over the trunk, and this went on increasing for about six months. During the past six months this discoloration has been perhaps but little increased. Now we find that his pulse is feeble; also his heart action is increased; there is the history of lumbar pain and vomiting at long intervals. Now, with these symptoms, the lumbar pain and increased physical weakness being present at once that disease so-called "Addison's disease," comes to our minds.

As yet we do not know the exact nature or cause of Addison's disease, and cannot find in this case any special cause. The patient is a man of middle life, and statistics show that this disease is more common in the male than in the female, and more common in adults than in early life. There is in this case no history of injury. The most common cause perhaps of his disease is tuberculosis, for, of course, there is tuberculosis of other organs of the body than of the lungs. For this lesion we must look most carefully. We can only surmise these lesions as to the suprarenal capsules in the living clinical case.

On inspecting the surface of the skin, we notice in the majority of cases before pigmentation of the skin occurs there is a slightly increased asthenia, and that noticeable weakness comes on without any apparent cause. There is more or less hebetude. It shows in this man's face; it indicates more or less apathy or mental fatigue and weariness. These symptoms after lasting six months are followed by increased pigmentary deposit. You will notice the skin of the trunk is distinctly bronzed, but it is most marked upon the face, neck, arms, and hands, and over the most naturally exposed portions of the body. This is found to be always the case in actual practice. This you see is a deep brown hue. This is a typical case so far as the skin is concerned. The mucous membranes are likewise involved. Notice the mucous membrane of the lips; there is pigmentation near the junction of the skin with the normal line of the mucous membrane; there is a dark line. Notice, too, there are a few smaller spots over the lip. On holding the cheek out, or by the use of the tongue depressor, the discoloration can readily be seen on the mucous membrane on the inner side of the cheek. The feebleness of the circulation should also be carefully noticed. In this case, the heart is weak; no cardiac murmurs are present, but the heart sounds are distinctly feeble; the hands are cold, owing to the feebleness of the circulation. Diarrhoea is often a troublesome symptom, which appears late in the disease.

In Addison's disease we find that the nervous symptoms are usually mental apathy, lack of interest in things going on about the patient. Later on in the

advanced stages of the disease, it grows so marked that the patient must lie in bed. Now in this case where there is marked general and feeble circulation, gastric irritability or lumbar pain, as in this case, we have the patient lie in bed part of the time and avoid all kinds of excitement. Look out for the possibility of the pigmentation being due to filth, and to exposure to sun and wind, as in the case of tramps. The history will always show the possibility of the diagnosis. Do not fail to look carefully over the body for parallel scratch marks. In the case of tramps these scratch marks are present. They do not use the daily bath and soap. The pigmentation of the skin may be confounded with carcinoma, especially where it is on the stomach, but this man's abdomen fails to reveal carcinoma. We must also look for cirrhosis of the liver; but in cirrhosis the mucous membranes are not involved; there is no marked progressive emaciation and asthenia. We also look for sugar in the urine, which is absent in the case before you. It may also be confounded with exophthalmic goitre, but there we have the peculiar cardiac symptoms, which are not present in the case before you. Nitrate of silver may produce discoloration, but we find this man has not taken any nitrate of silver, and in the use of nitrate of silver the mucous surfaces are not involved as they are in this case. So, after eliminating these symptoms, we may make at times a reasonably certain diagnosis.

The prognosis is exceedingly grave.

The trouble with the patient is that the ad renal secretion is absent. It is necessary to normal metabolism. Yet it happens sometimes that at postmortem examinations the renals may present a normal appearance. The abdominal sympathetics are involved, and their involvement may in this way disturb the so-called normal secretion.

By the use of extract of supra-renal capsules in the treatment of these cases the mortality has been reduced and a certain proportion of cases have been cured. The duration of this disease is from one year to four or five years, and the termination has almost invariably been fatal. They die of increasing asthenia; but sometimes they die of coma or convulsions. In the treatment we should resort to all hygienic measures; let the patient move about slowly and gradually. Syncope may follow; but let him move about at least an hour after lunch. Iron and arsenic may be given, but they are not necessary. Give general tonics. The solid extract of supra-renal capsules is indicated, beginning with one grain dose and gradually increase it until the patient gets five or more grains a day.

ACUTE BRONCHIAL CATARRH ASSOCIATED WITH ACUTE NEPHRITES.

THE following is that of boy who undoubtedly has nephritis. I will give the account of the examination of the urine. The first urine analysis tells us that the amount of urine passed from 5 p. m. until 2 a. m. on October 18, was a little over two ounces; was largely clear and acid; contained no sugar; about 1 per cent. of urea. Microscopic examination showed uric acid, epithelium cells, but strange to say, no casts and no red blood cells, and this examination was made with the utmost care, the urine being first placed in the ——— machine. Another examination made on the 19th tells us that the urine could not be well measured because, I presume, of a certain amount of it having been passed during frequent evacuations. Four ounces were passed from 4.30 p. m. to 4.30 a. m.; albumen still abundant; urea 1 2-10 per cent., and nothing said about casts, although epithelium cells are recorded being found; I presume renal cells. The urine at the next examination on the 20th had increased in amount; at least, a greater amount was obtained and measured. The amount passed from 6 p. m. October 19th until the following morning at 6 a. m. was twenty-one ounces; sp. g. 1008; albumen still abundant; epithelium cells; no casts recorded as having been found. Another examinatlon on the 21st records the amount from 1 a. m. to 1 p. m. of the same day as seventeen ounces. The urine seems to be increasing in quantity. Some was lost during a loose movement of the bowels. Albumen present to the amount of two drachms; urea 1 1-6 per cent.; still no casts. To-day the amount passed from 1 p. m. to 1 a. m. was thirty-one ounces, and some was unavoidably lost. Sp. g. 1004; urea 7-10 of 1 per cent.; epithelium cells; no casts. That seems to me a very curious fact. I know of no case of this kind, a case of acute nephritis as this must be, without the abundant presence of epithelium casts. Epithelium cells are present here, evidently from the kidneys, but have not become moulded. Indeed, sometimes we see a case like this in which there are casts but no albumen; sometimes there may be neither casts nor albumen, but strange as it may seem, you may set it down as a fact that, whether after scarlet fever, that the healthy portion of the kidneys continue to perform their functions, and that the diseased portions, from which albumen would exude, are so blocked up that they cannot, and the perfectly healthy portions continue to carry on their functions, of course, imperfectly.

What is the cause of this condition? The child has not had scarlet fever, nor is there any reason to suppose that he has had a renal attack; he has taken no toxic substances; there is no history of his having been given doses of turpentine, or any of those drugs which are known to excite this form of trouble; there has been no blister applied to the skin, but such cases are on record. There is no question that exposure to cold will give rise to this condition, and it is probable that this boy has been thoroughly chilled while at play or in some other way. He has certainly got an acute bronchial catarrh which still exists. It is difficult to make out at a glance, from the copious notes which have been taken of this interesting case, just what have been the salient features of the treatment. It has, of course, been directed toward promoting the activity of the skin and bowels, which is our object in all these cases. He has had hot packs and hot mustard baths; hot water bags over the renal regions. These have been the principal features of treatment, repeated at suitable intervals. His skin has been kept moist in this way; the glands of the skin have been excited, and activity maintained in that condition ever since his admission to the hospital. When I saw him yesterday he was wiping the perspiration from his face. Internally, aromatic spirits of ammonia in doses of one drachm at frequent intervals, and the purgative used has been one which

I consider the best, the simple ol. ric., in which the first dose in his case was three drachms. He has been nourished exclusively by milk, and in addition he has been given a certain amount of whiskey and water to quench his thirst. A little later he was given digitalis, the heart having become somewhat irregular, in doses of five drops every three hours. I am told that the aromatic spirits of ammonia were not continued. The treatment that one should pursue in all these cases is just about what has been outlined here. The great thing is to keep the skin perspiring, and this may be done with an ordinary hot bath, with temperature of 105 to 106 degrees. The patient, whether adult or child, may be kept in the water for fifteen or twenty minutes, and watched while in the bath, the time of the bath adjusted and regulated by the condition of the patient. Such a bath makes some people faint, and a close watch should be kept on the patient by an experienced nurse. Another method of causing perspiration is the hot-air bath, and this may be administered by having a suitable apparatus in the bed; a lamp burning in the bed with a wire gauge about it, and a cradle to prevent the clothing taking fire. Or hot air may be conducted by a tube or pipe under the bed. Then there is the old-fashioned bath, called the "Poor man's bath," consisting of several bottles of hot water, over each of which is drawn a stocking.

Now as to the diuretics. It seems to me that it is rather unphilosophical to try to stimulate a kidney which is already in a state of irritation from inflammation, and I doubt very much whether the drugs that are given for the diuretic effects in these cases have the action that is attributed to them.

PERPETUAL YOUTH IN EGGS.

THE *Lancet* gives the following formula for an effective egg preservative: One pound of water glass, silicate of soda (which can be obtained from the pharmacist), should be dissolved in a gallon of cold water. It will take some time to mix the syrupy silicate with the water, but it should be thoroughly done. The resulting solution is placed in an earthen jar, and the eggs put point downward in it, care being taken that every egg is entirely covered by fluid. Any loss caused by evaporation may be "made good" by simply adding more water. Eggs placed in this solution will keep "perfectly fresh" for a year or more .Just before boiling the shell should be pierced, otherwise the egg may burst.

KNIFE-AND-FORK SURGERY.

THIS name is given by the *Hospital* (*Lit. Dig.*) to a method of operation lately described by Koenig at Berlin, intended to prevent infection of the subject by the surgeon's hand. Says this paper:

According to this an attempt is made to perform the operation without ever touching the tissues, much as we eat our meals by aid of forks and spoons instead of clawing our food. By practice with suitably devised metal instruments, which, of course, are capable of complete sterilization, he has found that he can get through very many operations without ever touching the wound. Even in abdominal cases, in many of which it is often impossible to avoid introducing the hand, he carries his instrumental method to its extremest limit. In operating on cases of appendicitis during the quiescent interval he has been able to do the entire operation with instruments. This is a method which, while it has its advantages, has also its limitations. One can hardly doubt, however, that the surgeon often does things with his fingers which, by aid of a little practice, could be done just as well with an instrument, and, if we are to accept as correct all that is said about hand-infection, it would often be well, in suitable cases, to adopt the "knife-and-fork" method of surgery.

—The *New York Medical Journal* and the *Philadelphia Medical Journal* have been consolidated. We think it would be more accurate to say that the latter has been absorbed by the former. Dr. Frank P. Foster, the able and accomplished editor, will still remain at the helm, and we are happy to note that Dr. Kenneth W. Millican, for some time past nominal associate editor, has become so in fact. These papers have always stood in the front rank of journalism, and with combined effort, renewed energy and new blood, the future is guaranteed.

—The fifty-ninth session of the American Institute of Homoeopathy was held in Boston in June. Fifty-seven seniors, four hundred and fifty-eight members registered and about seven hundred visitors were in attendance. One hundred and sixty-two new members were added. Governor Bates delivered an address of welcome. The impressive address of President Cobb was well received. The literary and scientific part of the session while interesting, presented nothing especially new or of great professional interest. Socially the meeting was considered a success. The next meeting will be at Niagara Falls.

—The antiseptic shaving saloon is the latest achievement of hygienic science. The victim is seated in an enameled iron chair, with his neck and shoulders enveloped in a rubber pad that has been dipped in an antiseptic solution. Previously the razor, soap dish and brush have been sterilized by half an hour's hard boiling. Nothing is allowed to touch the face that has not been either sterilized or disinfected antiseptically. Even the finger-tips of the operator are dipped in a solution. Taps are turned by the foot, and the drawers where towels are kept are microbe proof.

—It is announced in the daily papers (*Lit. Dig.*) that Prof. Arthur W. Goodspeed, of the University of Pennsylvania, has succeeded in taking photographs by light emitted from the human body. These rays seem to be secondary disturbances caused by allowing the radiation from a Crookes tube to fall on the body; but care was taken to avoid confounding direct or reflected rays from the tube with the body rays. It is suggested by the professor that the rays given out by different persons may be different and in some way characteristic of their sources, so as to furnish a new means of personal identification.

The Coroner was inquiring into the death of Socrates and Dr. Esculapius was on the stand.

"You say, doctor, that the deceased came to his death from drinking hemlock. In what region would hemlock most affect him?"

"In the lumbar region, I should say."

MISCELLANY.

—Recent chemical experiments have demonstrated that saltpetre can be produced from air by electricity at less than one-tenth its present cost.

—Five to ten drops of the tincture of gelsemium every four hours will almost invariably relieve that painful condition of backache commonly called lumbago.

—The National Agricultural Society of France states that chemical alcohol of 100 degrees can be made from carbonate of calcium and its product, acetyline, at from 20 to 25 francs for 26 gallons.

—Professor Meunier, member of the French Academy of Science, announces that a volcano is forming under the Place Republique, which sooner or later may become active and blow Paris into atoms.

—An interesting case is reported of a man in Raleigh, N. C., who while in a recumbent position with his hands under his head, sneezed violently and dislocated both shoulders.

—Ten to twelve parts of water and one part of ammonia will preserve soft rubber any length of time. Keep rubber pipes, etc., in a glass jar filled with the above solution. Use for your ammonia bottle a rubber stopper; it is better than a glass stopper.

—A note from Bologna, via Rome, states that Signor Marconi has discovered a method by which oxygen may be extracted from air at very slight expense. The discovery, it is said, was made while the inventor was attempting to simplify his method of water electrolysis.

—About two years ago a prize of $1,000 was offered for the best scientific research work done by a woman. The prize has been awarded to Dr. Florence R. Sabin, assistant in anatomy in the Johns Hopkins Medical School, on the results of investigations on the "origin of the lymphatic system."

—Naegeli announces that he has frequently caused almost immediate cessation of cephalalgia and facial neuralgia, as well as forms of long-continued odontalgia, by simply elevating the larynx, holding it well upward for sixty or seventy seconds. This frequently requires to be repeated several times, but quite as frequently one single attempt will prove successful.

—In operations on alcoholic subjects (*Intern. Jour. of Surg.*) it is often wise to give them a drink of spirits an hour or less before its performance. These people are more restless than others and often require a greater quantity of the anesthetic to abolish sensibility, but long deprivation of drink only tends to intensify these unfavorable tendencies.

—At a recent meeting of the New York Society of Medical Jurisprudence, Dr. T. K. Tuthill declared that more inebriates were being made in one month by druggists who sold so-called tonics than all the liquor saloons produced in a year; and that it was appalling the number of women who were becoming the victims of drink without knowing it through the use of a popular "tonic" wine.

—Four oranges eaten every day are effective in removing the desire for intoxicants. One should be eaten before breakfast, one each at 11 a. m., 3 p. m. and 6 p. m.

—A man was walking along the Boulevard Saint-Michel, Paris, one day recently, and stopped to light a cigarette. Suddenly his nose burst into flames, which spread to his beard. A crowd assembled, while the unfortunate man danced with pain until a policeman took him to a pharmacist's shop, where his burns were treated. An examination of the nose showed that it was made of celluloid, the unscrupulous dealer who sold it having foisted it on his client instead of the horn nose which had been prescribed.

—An application for approval of the incorporation of the Lorenz Orthopedic Charity Hospital has been filed with the New York State Board of Charities. Statements given out by the directors named are to the effect that it is the plan to establish an institution for the free treatment of congenital dislocations of the hip and similar deformities among children, making use entirely of the Lorenz method.

—A bill has been introduced into the Minnesota Legislature declaring that it shall be unlawful for one person to kiss another unless he has proved that he is free from contagious or infectious disease, and further that a certificate from a physician declaring a person to have a weak heart, shall constitute a bar to indulgence in kissing, and violation of the proposed statute is accounted a misdemeanor, published by a fine of from $1 to $5 for each offence.

—The question as to whether or not the surgeon may honorably divide his fee with the physician who refers him a patient for operation excites almost as much interest in Europe, so it seems, as in this country. The French have even given it a name, and in modern fashion call it *Dichotomie*. The council of the Brussels College of Physicians have recently passed upon the ethics of the practice and condemn it unsparingly. In Belgium the commission varies from 25 to 50 per cent., and while it is comparatively rare in Brussels, in the provinces it is quite common.

—A lay newspaper, discussing some observations of the late Minister from China, Wo Ting Fang, quotes him as follows: "Even more ancient is the practice of homeopathy which has now become a recognized branch of medicine. There was 'healing by similarity' nearly 2000 years ago, and curing by minute doses of poison. This and other practices died out for something over 17 centuries, only to be revived in our own day as nineteenth century inventions."

—Some curious experiences are reported from Italy as to the effect of colors on the nerves of the sick and insane. In the hospital for the insane at Alessandria special rooms are arranged with red or blue glass in the windows, and also red or blue paint on the walls. A violent patient is suddenly brought into a blue room and left to the effects of that color on his nerves. One maniac was cured in an hour; another was at peace in his mind after passing a day in a room of violet. The red room is used for the commonest form of dementia—melancholy—usually accompanied by a refusal to take food. After three hours in the red room a patient affected in this way began to be cheerful and ask for food.

ORIGINAL ARTICLES.

INSANITY AND HOSPITAL MANAGEMENT.

BY JOHN S. TURNER, M. D., TERRELL, TEXAS.

THE disease insanity is as old as the history of man, and is manifested in the individual by the gross exaggeration of normal tendencies, actions or speech, ordinarily called eccentricity, or by morbid manifestations of the emotions or animal propensities.

In my opinion, Burr gives the most concise definition of the disease. He defines insanity as "a prolonged departure from the individual's normal standard of thinking, feeling and acting."

"The law assumes to define insanity; it says 'that a criminal is insane if he does an act whose nature and quality he does not know, or if, knowing the nature and quality of his act, he does not know whether it is right or wrong.'" (Church and Peterson).

Medical jurisprudence agrees with the legal branch as far as it goes, but from a medical standpoint, we contend that the law does not go far enough, and that the individual should not be held responsible for his acts even though he did know they were wrong, provided that his ability to act upon such knowledge has been impaired by disease.

Should the legal definition be applied to the inmates of our hospitals, we would be forced to release fifty per cent. of the present population, but the fact that they knew right from wrong would not deter them from committing dangerous and criminal acts upon society; but the loss of control of will power or inhibition, from disease, often permits these unfortunates to do violence and commit atrocities that they know at the time to be wrong in the sight of the law.

Insanity was known and spoken of in the days of Moses, and Egyptian civilization and the Israelites were warned that a visitation would be sent upon them for disobedience to Jehovah. Many of the old kinds and personages of Bible history showed evidences of mental aberration and obscessions from faulty heredity, if indeed, they were not actually insane; for instance, Nebuchadnezzar was insane and went into the fields and ate grass for seven years. Nero, the most atrocious murderer of his day, labored under a sanguinary obscession. The Dweller in the Tombs was insane, as were many others that could be mentioned. History gives us many interesting instances of insane inheritance. Howard says in "The Perverts," that the "histories of men who have stamped their individuality on the world, show many of the traits which denote a lack of equilibrium in their mentality. Lombroso and Weir have given us a list of such men. Julius Cæsar, who was both a mighty leader and ruler and a man of state of high rank, was an epileptic. Molliere also suffered from epileptic attacks, as well as did Petrarch, Floybert, Handel, Peter the Great, Paganini, Mozart, Schiller, Alfiero, Richelieu, Newton, Swift and many other men of talent and genius.

A form of nervous instability, which, under different circumstances, might have resulted in dipsomania, affected Montesquieu, Buffon, Dr. Johnson, Crebilon, Lombardine, Thomas Campbell, Carducci, Napoleon and Socrates; Alexander died after having drained ten times the cup of Hercules.

Among the men and women who were possessed of obscessions we mention Coleridge, Thompson, De Quincy, Carew, Sheridan, Steele, Addison, Hoffman, Charles Lamb, Madam de Stael, Burns, Savage, Alfred de Musset, Pierre Dupont, Kliest, Carracci, Jean Steen, Moreland, Turner, Gerard de Nerval, Dussez, Handel, Gluck, Praga, Rovoni, Somerville, Poe and others. (Howard.)

Before the sixteenth century those persons whose mental obliquity became so pronounced that it was necessary to restrain them, were said to be possessed of evil spirits and were therefore remanded to the priests for incarceration and to have the evil spirit removed by prayer, laying on of hands or beating and starving, if necessary; the satanic influence must be removed even though it required death to do it.: This method of treatment of the insane was practiced to a more or less limited extent, even after the sixteenth century, at which time two men of science appeared upon the arena of scientific research and began the emancipation of the insane from ancestral superstitions, chains, the lash, starvation and social ostracism, which had existed since the history of man, and established after many years of hard work, the fact that every psychic disturbance had a physical antecedent, or that the mind is not a separate entity to be possessed of evil spirits, but that the phenomena of mind is but the functioning of the brain, and, therefore, had a physical basis.

These philanthropists were Pinel and Tuke. While the fields of their action were widely divergent, yet they worked to a common end, Pinel in his native land, France, and Tuke in England.

From these two pathfinders has been evolved the science of psychiatry, and from their teaching has developed the modern alienists, bringing the more enlightened and humane methods of treatment and management to the insane. Instead of the monasteric dungeon, there is now the modern hygienic cottage, robbed of every possible suggestion of the former mad-house and converted into a modern hospital. No more chains and lashing, but, instead, the moral suasion and restraint of a well-prepared nurse, who has passed successfully the examination required after a three years' course in a training school for nurses. Instead of being starved to dispossess the evil spirit, the patient is given highly nourishing and easily assimiable food to strengthen their waning nervous energy and lowered physical vitality, so that the mental equilibrium can be re-established at the earliest possible time. Instead of curses or prayers, to drive out this evil obscession, we administer to them the remedies that science and experience has taught us are most effectual in relieving the nerve centers of the load of poison that has been pent up there to be destroyed instead of having been eliminated by the excretory organs, as nature designed.

We see what has been done in the past in the direction of alleviating the suffering of the most unfortunate of our defective population; now let us make a little introspection and see what we, as a people and state, have done in the past and what we should do in the future, to assist in unburdening this, the worst of all physical derangements, by furnishing them with every necessary provision of becoming fully restored to their families, and, indeed, to themselves.

We have seen that the disease has existed from the beginning of man's career upon the earth, although in a misunderstood light, and that individuals suffering from mental instability have had much to do with the molding of ideas, customs and laws in the centuries past, and at the same time given to the world and society a progeny

who inherited more or less of parental instablity, and in turn sent an ever-widening circle of faulty inheritance into the world.

What is our duty in the matter? First, we should have some wholesome laws restraining the marriage of defectives. At this point we are met by many difficulties and obstacles, and the question as to the right one human being had to deprive another of God-given rights, but when we consider "the greatest good for the greatest number," we must admit that it is more humane to deter one individual from performing this right than to build asylums for the many for whose faulty existence he might be responsible. It might be said that our higher civilization will, by environment and education, overcome the physical defect of the individual. To this I must demur. Like all other natural processes, there is no standing still, and we as a people are either growing more stable or more unstable, and this whirl called society and higher civilization, in my opinion, is not conducive to mental or physical equilibrium, and then we intermix the unstable molecular action that must be transmitted by parents of questionable mental or nervous organization we are justifiable in saying, "Thou shalt not."

One may say that it is a subject for the lawmaker to grapple with, and I admit that this is true, but who is to call this matter to the lawmaker's attention if not the physician? As a rule the legislator is not a physiologist, biologist or physician and can only learn of these sociological truths by discussing them with those who have given some thought to the subject. The old proverb that "an ounce of prevention is worth a pound of cure" is the key to this situation.

Then we are confronted with the responsibility of caring for these unfortunates after they are thrust into the world and are mercilessly ostracised by society for an infirmity for which they are in nowise responsible—I refer to those who become insane through faulty heredity—we must also care as tenderly for those who have become insane from local or acquired causes or reasons; this class, however, does not make up the bulk of our insane population, and as a rule are subjects of favorable prognosis.

The insane population in this state has kept pace with the rapid development of the state in other respects, and from a small handful of patients and one asylum located at Austin, we now have three large hospitals and the fourth one under course of construction, all crowded to their utmost capacities, and daily demands are made that cannot be met. We have at this time in the neighborhood of thirty-five hundred insane persons in this State, over three thousand of whom are now within the walls of the three asylums. Notwithstanding the progress made in every direction, our laws for the commission, admission and care of the insane have remained practically unchanged for forty years, and we are now operating as best we can under a law that was adequate for the care of one institution and a handful of patients, and they located at the capital, where the legislative and executive officers could more certainly look into their needs and provide for the same.

It is a great responsibility to look after a large hospital for the insane when all conditions are favorable and when unnecessary encumbrances are to be reckoned with, it proportionately increases the responsibility.

Texas should have a complete revision of her insanity law, with a view to meeting the demands of the ever-increasing population. Our defective population should be classified in institutions best adapted to their several needs; for instance, where is the economy or good judgment, not to say the humanity in keeping weak-minded children and dotards—old men and women—who are only defective mentally as well as physically through age, in an institution where strong and expensive restraints must be maintained? What they need is not restraint, but, in the first class, scientific training, and in the latter, careful nursing and attention in good comfortable cottages with wide and shady verandas, warm in winter and cool in summer.

Children suffering from arrest of mental development offer as good results, when properly treated, as do any of our defective population, which treatment they cannot in the nature of things, get in an insane hospital.

The epileptics will soon be placed in a separate institution. Then the criminal should be separated from the innocent insane, as they are a great menace to the ordinary insane and impress upon them more indelibly than ever that their delusional notions of persecution are true and that they have been committed for some crime, as they know that others among them have been so committed, and why not they, as they have a more or less distinct remembrance of having been arraigned before a court and jury and of having to plead "guilty or not guilty," the charge to and verdict of the jury, etc., etc.?

A hospital for the immediate reception of every case of acute insanity should be established and every possible opportunity offered recent cases for recovery.

The other institutions should be maintained for the care of the chronic insane and should receive all cases as soon as they become chronic.

Jury trials, by all means, should be abolished, and, instead, have a board composed of the County Judge and two reputable physicians, appointed by the commissioners's court, to visit their homes and in a scientific way pass upon the sanity of a person suspected of being insane. Require each County Commissioner to report, from time to time, all defective persons in his district. This would, at least, give us a more accurate system of vital statistics.

Have a State Board or Commission who should have sole charge of all the eleemosynary institutions and who would devote their entire time to such work, have that board composed of, say, three men who are especially adapted by temperament, education and training for the work; at each institution, and composed of local men and women, there might be a visiting committee, whose duty it should be to frequently visit the institution and patients, and act in advisory capacity to the State Commission; this State Commission should make frequent visits to the various institutions and should make all requests upon the Legislature for needed appropriations, thus maintaining a uniformitiy of the same throughout all of the institutions. These Commissioners should be appointed by the Governor for a period of three or more years, the Senate confirming, the commission of two members expiring the same year; thus eliminating politics from the management of the hospitals, which should be as completely divorced as church is from state.

Have the merit system prevail in all appointments of any note; in petty appointments allow the superintendent and the board confirm, these appointments also to be made on the merit basis.

The institutions are now handicapped by having their appropriations first scaled by a legislative committee

who know nothing of its needs, take it for granted that the superintendent has asked for the outside amount and they invariably give him less than his requisition calls for and as often injure the efficiency of the hospital, and, indeed, of the amount that is appropriated, as it is inadequate, it must be used as sparingly as possible in order to get through the year; and then to make matters worse, this committee divide up the appropriation into a dozen or more heads and say to the hospital management, this amount for this purpose only, just as though the unexpended amounts did not revert to the State treasury. Often these amounts are scaled until they are entirely inadequate for the purpose for which they were intended, and it does not matter how much unexpended money there may be under another head of the hospital's appropriation, it canont be used legally to help the appropriation that is inadequate, and thus the end sought is defeated.

Our appropriations for ordinary maintenance should bc made in bulk, new buildings and items of that kind being made for specific purpose, as is done in other States.

There is not a dollar of State money handled by any hospital officer; therefore, no danger of malfeasance, and I would not have it otherwise, although we are under bond for the protection of the State's interest in all matters coming under our supervision. Every transaction with the hospital is done by voucher sworn to by the interested party, certified as correct by the storekeeper and accountant, if it is a sale, approved by the superintendent and president of the board of managers, and then sent to the State Treasurer before a dollar can be drawn.

If we had a competent State Commission, all these obstacles to hospital management could be averted, as this commission would be in position to more readily secure all the needed reforms mentioned, as well as many others, for instance, a uniform system of statistical record-keeping should be adopted and the necessary amount and character of help, provided to keep up such system. As it is now, each hospital adopts its own method of keeping statistics and records, except a general record of patients that is required by law, which is very meagre. Each change in the management of the hospital is likely to, and usually does, bring about a change in its system and method of management. This is not only detrimental to the general welfare of the institution, but is equally so to the individual welfare of the patients, as every change of any moment is readily noticeable in the condition of the patients, they being perfect barometers of their surroundings.

The positions on the medical staff should be made statutory and more permanent, and sufficient salary paid to induce the best talent in the profession to accept these positions, and after doing so they should be protected in their position so long as they are efficient and are on good behaviour, for it requires time, work and experience for one to develop into a successful insane-hospital physician, even if he has the proper adaptation, and it is by no means every one that is adapted to this work.

I have had the pleasure of visiting twenty-one of the best institutions for the care of the insane in the United States last Summer; found in New York—in my opinion the most advanced State in the Union on hospital management—that the law does not permit the expenditure of less than $550 per bed in establishing a new hospital. We spend from $140 to $200; the consequence is we have trouble with our buildings within a few years; they seldom do.

We have the grandest State and the noblest people on the globe, and it is not my purpose to criticise either, but in justice to both I feel it my duty to point out the needs of our hospitals, and I have the faith to believe that when our lawmakers know the needs of the eleemosynary institutions, that they have the abundant patriotism to provide the means.

In New York they spend from 180 to $208 per capita for ordinary maintenance and declare that less than that amount is inadequate to properly provide for their patients; we spend from $122 to $140 and complain of extravagance. They spend a little over $11 per capita for medical services; we spend less than half that amount. They have legal provisions that permit their patients to be admitted into the proper hospital immediately; we confine ours in jails with the meanest criminals. They have detention quarters for infectious or contagious disease; we have none. They transmit their patients to the hospital like sick persons; we like criminals; trained nurses going for their patients, while the County Sheriff brings ours, often in chains. I have seen patients admitted into our hospitals suffering from delirium in consequence of an attack of puerperal fever or acute nephritis. It is needless to say that they lived but a few hours after admittance and that if the proper medical commission had made the examination, instead of a jury, that the patient would have never been forced to undergo the ordeal of being transmitted by the Sheriff over a very rough road, as was the case with one patient, to an insane hospital, to die within twenty-four hours after admission. Yet, right here permit me to say that our hospitals are in better condition to-day than they have ever been in their history, due largely to the impetus given by the strong personal interest manifested in them by Governor Sayers.

All the States that have had proper attention given their insanity laws have an attendant to each six or eight patients; in fact, I saw in a violent ward in an Illinois asylum, six attendants caring for eight violent women. We have one attendant to each sixteen patients. They require attendants to work from eight to twelve hours in each twenty-four; we require them, through necessity to work from thirteen to sixteen out of the twenty-four hours. They have training schools for nurses and require their "charge" or "head" nurse to be a graduate of one of these training schools; our attendants, as you can readily see, have no time to attend training schools. They have attendants, as well as officers, who spend many years at their chosen work in one hospital. I saw one female attendant in New York State who had been in one position for thirteen years; it is the exception in the history of our hospitals to find an officer in the same hospital for over four years, or an attendant in the work over twelve months; the changes in administration or meagre salary is accountable in the first instance, and long hours and short pay the reason in the second place; for after a time the nervous strain even on strong persons manifests itself and they lose their positions in consequence of becoming incapacitated for the work, due to the naturally trying position that they must occupy, and especially so with the long hours required.

Our number of attendants is by half too small, the pay inadequate to secure the best assistance, and the hours of service entirely too long. Common judgment

teaches that one attendant to sixteen insane patients is an inadequate number. For thirteen to sixteen hours of work they receive fifteen dollars per month as new beginners and up to twenty-five dollars, when they become more proficient, twenty dollars being the average, night attendants getting twenty-five dollars per month for fifteen hours' work, one night attendant caring for from seventy-five to one hundred patients.

It is not only injustice to ask people to wrok such long hours, but it is an injustice to the patients to have them do so, as they cannot possibly be as efficient as if they had more recreation and shorter hours; the consequence is that it is an exception to find an attendant in a Texas hospital who has been in the service longer than one year. These frequent changes cause us to have to manage the hospitals largely with inexperienced help all the time, which also is very detrimental to the welfare of the insane. Anything that disturbs their quietude, especially when they begin to improve, is detrimental, and to have inexperienced help all the time, and a general change of officers and policies every two or four years, it is remarkable that we have the rate of restoration that we do.

We should have two reliefs, so that neither would be required to work longer than twelve hours. The remuneration should be such that the most competent help could be secured; then a training school for nurses should be maintained at each hospital and every one directly in charge of patients should be required to attend and become familiar with the peculiarities of the various forms of insanity from a scientific standpoint; they should understand how to be tactful with those suffering from hallucinations, delusions or illusions, and if found not to be adapted to the work—and here let me say that not more than one person out of every ten is adapted to insane hospital work—they should be advised to discontinue at once.

There are two methods of management in vogue in some of the States I visited that I desire to mention in order to condemn; they are, first, what is termed "duality in management"—the medical supervision under one superintendent and the business or financial management under another superintendent, each having absolute authority in his department; and, second, "the county care," which is much after our poor-farm methods, except it is an improvement on the same, yet it is an undesirable arrangement, in my opinion, for the proper care of the insane, there being many reasons for condemning both of these methods.

If we hope to bring our State abreast of the times in this particular, we must ask our lawmakers to assist us in doing so, which they will no doubt do, when they properly unerstand our needs.

—The librarian of the Philadelphia Free Library believes that the chances of spreading disease by the circulation of books from a public library are very slight. He states that for every book touched by a reader there are fully 100 handled by employees of the library, among whom, in spite of this, there has not been an instance of contagious disease since its beginning. When one of the volumes is found in a house where there is a contagious disease it is destroyed by the physician in charge, this being by order of the Board of Health. Less than 200 books a year are lost in this way.

DIATHEION.

THE UNRECOGNIZED VALUES OF A NEGLECTED DRUG.

SULPHUR in a new and diffusible form, known under the name of DIATHEION—its great value in chronic cystitis, meningitis, myelitis, enteritis, etc., and its curative effect in tetanus, osteoporosis, and other acute and chronic diseases of horses, cattle and other animals.

BY JAMES ROBIE WOOD. M. D., NEW YORK CITY.

THE wide therapeutic applications of sulphur, its peculiar antiseptic qualities and its hidden forces which can be developed by proper manipulation, are so little understood that a declaration of its manifold powers would be received with incredulity; yet it is certainly one of the most valuable medicines known to man.

Ancient faith in its supreme virtue was evidenced by its Greek name. Theion (godlike), a faith probably awakened and strengthened by the marvelous results of perfect preparations, which are now among the lost arts.

Deprive the body of one or more of its sulphur salts, namely, the sulphates of lime, soda and potassa, and man more readily succumbs to disease. Being destructive to nearly all insect life and the pernicious bacteria and ptomaines, as well as animal and reptile venoms, and many vegetable toxins, there is reason to believe that, under proper conditions, sulphur in a diffusible form will resist their baneful influence. This belief is confirmed by the entire absence of sulphur from the chemical composition of all ptomainese and bacteria, except a few known as *sulphur-bacteria* which are probably scavengers. It has been asserted that, being cyanogen compounds, toxic ptomaines, having greater affinity for iron than oxygen has, may displace the oxygen and form ferro-cyanides, which cannot absorb oxygen, hence death, sometimes resembling asphyxia, may occur during apparent health, as well as in the course of septic and other diseases, when such toxins are virulent and overwhelming, unless elimination and chemical antagonism are promptly applied. If this theory is correct then large volumes of a diffusible sulphur quickly introduced to the circulation, before the iron has been extensively changed, may avert disaster, for by a chemical union of sulphur with toxins, sulpho-cyanides are formed, which, having no affinity for iron, do not interfere with the iron's oxidation.

To continue upon this hypothesis: Some of the less toxic ptomaines unite very slowly with iron, but if not eliminated or neutralized, may insidiously develop a persistent anæmia. As results in practice seem to verify this theory, vigorous efforts should be made to separate the cyanogen from the iron and to simultaneously neutralize the free cyanogen to avoid further toxication. Citrate of soda freshly made by combining lemon juice or citric acid with bi-carbonate of soda, answers fairly well and is generally attainable; this taken with diffusible sulphur and possibly, in some cases, with citrate of iron added, is as safe and potent as anything. The citric acid is easily digested, and the free soda by combining with the cyanogen separates it from the iron thereby permitting re-oxidation of the iron, the diffusible sulphur simultaneously neutralizing the toxic sodium cyan-

ide. Much of this may be challenged, outside of chemical doubts, in view of Sajou's late pituitary body theory, which seems to put the red corpuscles out of their legitimate business. Doubtless it will be contended that chemical disintegration of cyanide of iron within living tissues is an impossibility, yet as seeming impossibilities in very serious anæmias have been overcome by this simple means perseveringly applied by the writer, he thinks it better to try a safe possibility rather than stand idly by and suffer a pernicious condition to go on unchecked, or at best, wasting time with iron and manganese, which used alone are impotent under such conditions.

Several propositions in this paper may be objected to, but as the happiest results have followed the use of essential or diffusible sulphur when given in obedience to such theories, the writer presumes to utter them. To secure the full powers of sulphur a perfectly diffusible preparation is needed. That such a preparation, without acid or alkaline solvents, exists this paper will endeavor to prove by relating results in obstinate diseases obtained by the use of *diatheion*, which is a pure and freely diffusible sulphur in a bland medium; it can hardly be called a solution of sulphur for it resembles more an essential principle possessing intensified activity not found in crude sulphur. *Diatheion* also contains infinitesimal traces of silicic, fluoric and formic acids.

Any pure sulphur having the penetrating qualities of *diatheion* must be beneficial in maladies engendered by deficiencies of sulphur salts. That a diminution of certain physiological elements may cause serious disorders, there can be no question, and this is particularly true of sulphur and phosphorus. Man may starve amid luxuries for want of several necessary elements in his daily food, he may eat to satiety without satisfying all demands of the body. Extreme examples of deficient nutrition may be observed in those whose constant diet of white bread, supplemented by tea to hush the stomach's cravings, finally induces serious ailments, this the writer found far more evident in post mortems thirty years ago when such a diet was quite common among the poor. As taurine of the bile should contain a very large percentage of sulphur, its prolonged absence from food may cause serious trouble. With a complete analysis of foods and human tissues, and a knowledge of conditions and symptoms provoked by a deficiency or excess of each physiological element or salt, we might deal more intelligently with disease.

To those who know the very great value of sulphur it seems surprising that so few employ it, but it must be remembered that its insolubility has prevented its general use, therefore its acid and alkaline compounds have been substituted, but these have not the therapeutic qualities of pure sulphur. Trituration with milk sugar develops some activity, as numerous cures testify, but where a large volume of readily absorbable sulphur is required triturations are inefficient. If records of the past can be trusted, there is hardly a diseased organ or tissue for which sulphur has not been successfully used. A part of the record will be offered here to suggest possible experiments, and sulphur's possibilities are very great; *those maladies only which are distinctly named as having been benefited or cured are offered for immediate consideration.* Sulphur has not been appreciated in cases of malnutrition with emaciation; it favors assimilation and retards disintegration. We must, however, bear in mind that an injudicious use of sulphur may induce emaciation or troublesome eruptions; indeed, many conditions amenable to the action of sulphur may be aggravated or even produced by its excessive use; this is especially the case in cystitis. *Therefore, physicians only should be permitted to prescribe it,* and they must learn when to increase, diminish or suspend it. When there is no apparent action, the dose may be steadily increased, but when aggravations appear or well marked improvement has begun, the dose should be rapidly reduced. Attempts have been made by the illegitimate drug business to make sulphur a popular remedy, fortunately they have been failures, for stupid ignorance has generally found it a sharp edged tool.

Fortunately, sulphur aggravations usually subside upon suspending the drug, else it may be antidoted, or the conditions developed, treated symptomatically.

Sulphur has been used to give immunity against many diseases, but in its crude form its value is doubtful as very little more than its oxides can reach the blood. In contagious diseases, especially scarlet fever, diphtheria and variola, its internal, external and local use, have strong advocates. Upon nearly all mucus membranes, particularly that of the bladder, the diffusible sulphur exerts a remarkably beneficial influence. It has been employed as a preventive or curative in measles, grippe, many acute and chronic catarrhal diseases; malarial, typhoid and other fevers; gout and rheumatism; hemorrhoids; internal and external ulcers; furuncles, carbuncles, abcesses, tonsilitis, periostitis and enlargement of bones; pyæmia and septicæmia, especially when the sulphur is combined with phenol; pyelitis, neuritis, megrim, acute and chronic pneumonia, particularly epidemic pneumonia or "lung fever," as it was formerly more correctly called; chronic constipation, plastic exudations, anæmia and chlorosis when iron fails; amenorrhœa and dysmenorrhœa in rheumatic females; as a palliative in malignant diseases; in various parasitic diseases such as scabies, etc.; in many skin diseases, particularly pityriasis and psoriasis, used externally and internally; extensive ulcerations after vaccinations, etc.

The diffusible sulphur has proved of value in tetanus, ostœporosis and chronic anorexia, as well as bulimia of horses, and it seems strongly indicated in mouth and foot disease of cattle; it has been decidedly curative in parasitic diseases of dogs and fowl, and possibly it will be of benefit in swine plague and hog cholera. Some of these statements may be visions of enthusiasts, but in a large number of serious diseases it is safe to predict that a perfectly diffusible sulphur will undoubtedly produce good results.

Many of the following qualities ascribed to sulphur, by ancient and modern physicians, *are true under certain conditions*:—antiphlogietic, antipodagric, antirheumatic, antispasmodic, antiperiodic, antipruritic, antipsoric, antiseptic, astringent, alterative, analgesic, absorbent, expectorant, stimulant, tonic, emmenagogue, galactagogue, germicide, laxative, nervine, sedative, vermifuge, etc.

The alium and ferula group of vegetable medicines, such as garlic, onion and assafœtida, owe their potency as nervines to their most active element, sulphur.

Diffusible sulphur exerts a tonic effect on the walls of veins and capillaries, especially when combined with fluoride of calcium; in such, and all other cases of relaxed tissue, treatment must be prolonged three to six months.

In atony of the stomach and intestines with impaired digestion, diffusible sulphur has proved beneficial. In

local inflammations this form of sulphur sometimes surpasses ichthyol, and it seems to hasten primary union in cuts and lacerations. It intensifies the action of bismuth and several other drugs.

The following case shows sulphur's value even in triturations: A German physician, who served in the Franco-Prussian war, said:

"Although small doses of sulphur frequently re-
"peated, often produce troublesome diarrhœa, yet
"with a single small dose, finely ground with sugar
"of milk, I cured a serious chronic diarrhœa which
'had returned every morning for six months. I
"have found it useful in several chronic diseases,
"especially those sequent to measles and other
"eruptive diseases; also in cerebral disturbances
"following suppression of menstrual or hemorr-
"hoidal discharges."

Sulphur's record in whooping cough is peculiar; in some children it promptly reduces the number of paroxysms and speedily arrests the disease, while in others, even of the same family, its action is sluggish. This therapeutic unevenness is noticed in cystitis also. Possibly by substituting the crystalline *diatheion* for the amorphous better results may be obtained. In some individuals the crystalline acts as an intense tonic.

Extensive and deep ulcerations of the tongue and buccal cavity, which had long resisted other treatment were promptly healed by *diatheion.*

"Dr. W. S. of New York City reports the follow-
"ing case: "B. W., age 21. Physical condition had
"previously been excellent. Taken sick August
"10th. Two days later symptoms became serious,
"stools ranged from 30 to 40 in 24 hours. Great
"prostration followed, with restlessness and emacia-
"tion. Besides internal treatment, the bowels were
"washed out with antiseptic and astringent injec-
"tions.

"Twelfth day: No improvement, death imminent,
"apparently; all former medication except opium
"was stopped, and three drops of diffusible sulphur
"gradually increased to six drops was given every
"four hours; within two days the stools were re-
"duced to ten within twenty-four hours; the rest-
"lessness had in a great measure subsided, and the
"sunken aspect of the face disappeared. Treatment
"continued and each two days showed constant im-
"provement. Reduced dose of sulphur to one drop
"every three hours. His condition excellent, tem-
"perature 98 8/10°, two stools in twenty-four
"hours and 'ready to eat his own hide,' as he ex-
"pressed it."

This tonic effect of *diatheion* is marked and frequent.

Some of the unmistakable triumphs of this form of essential or diffusible sulphur have been in certain intractable cases of chronic cystitis, ranging in duration from a few months to many years; in the majority of such stubborn cases relief or cure was surprisingly prompt; the spasmodic pains, frequent urination with discharge of shreds of mucus and pus quickly disappearing. In a few instances a remarkable increase of mucus and pus followed large doses of the diffusible sulphur, and in persons sensitive to its action, even small doses sometimes increased the irritation. Fortunately such aggravations are easily subdued by withdrawing the sulphur and antidoting it, or by treating the conditions provoked symptomatically.

The antidotes, or rather the best alternating remedies, in *catarrhal conditions,* are pulsatilla, hydrangea, saw palmetto or pinus canadensis; in *cerebral and spinal diseases,* belladonna, bryonia and bromides; and in *pulmonary affections,* bryonia, phosphorous and pulsatilla. A case of chronic cystitis, of eight years' duration, yielded readily to five-drop doses given three times a day; but later a relapse occurred, when it was found that hemorrhoids aggravated the cystitis, so daily rectal injections of a teaspoonful of the sulphur were ordered and a half ounce was given internally every third day. Under these excessive doses a violent increase of the cystitis followed; the desire to urinate was repeated every few minutes, attended with great pain and an enormous increase of mucus and pus. The sulphur was withdrawn and saw palmetto substituted, and the bladder washed with very weak solutions of permanganate of potassa and boracic acid. Relief was prompt, but this patient will possibly have other relapses.

It must be borne in mind that excessive use of any sulphur may induce troublesome catarrhal diseases.

In acute and chronic meningetis and myelitis, diffusible sulphur may make a golden record. When it is remembered that cystitis is a frequent cause of death in myelitis, and that this preparation of sulphur is a potent remedy in many cases of chronic cystitis, we can understand a part of its value, but aside from this, and far beyond its antiseptic qualities, it has a direct unexplained influence upon the disease itself. What this mysterious action is, who can tell? The time is not yet when we may even suggest a possible law.

Diatheion, which is simply an exceedingly diffusible sulphur containing infinitesimal traces of silicic, formic and fluoric acids, may be administered in myelitis in rapidly increasing doses, from one to thirty drops, repeated every two to six hours and pushed until improvement begins, or the characteristic emaciation or eruptions of sulphur appear, then it should be suspended or reduced to drop doses or less. In a severe case of chronic myelitis in a child, the *diatheion* was used entirely alone in the above manner, and at the end of five weeks, when emaciation began, the remedy was withdrawn, then the patient rapidly improved and was soon restored to perfect health and strength. In meningitis, small doses frequently repeated produced the best results.

While it has cured with surprising rapidity several cases of tetanus in horses, no opportunity has appeared to use it in that disease in human beings..

It has been suggested as a possible remedy in rabies and hydrophobia. In osteoporosis, commonly called "big head," in horses, diffusible sulphur has cured many well marked cases.

The numerous maladies mentioned in this paper as having been cured by other forms of sulphur, are merely offered as suggestions for experiment, those only which are definitely mentioned, such as chronic cystitis, meningitis, myelitis, enteritis, tetanus, osteoporosis and a few others have been proved clinically with diffusible sulphur.

In veterinary practice it has produced remarkable results. A veterinary surgeon of extensive experience asked the writer to suggest some new remedy for tetanus, as he had been called to a case in a valuable hunter which was in a stable where a number of horses had already died of that disease. Large daily doses of

diffusible sulphur were advised. The rapid recovery of the horse, and later another in the same stable, spurred him to experiments in other diseases of horses, and the surprising results excited his enthusiasm.

As an intercurrent or adjuvant remedy, the diffusible sulphur is decidedly helpful; a well indicated drug may for some unknown reason become inactive, but after several doses of sulphur its therapeutic vigor reappears. Sulphur intensifies the action of several medicines and retards or neutralizes that of others. The dose of *diatheion* varies widely. Singular as it may seem, in some cases of chronic cystitis ten to sixty drops well diluted in hot water acted gently and cured rapidly, while in apparently similar cases in persons sensitive to drug action, even five drops intensified some symtoms of the disease. Therefore, when aggravations occur reduce to one-tenth of a drop and then gradually increase or decrease, according to effects produced. The citrate of soda, which has already been mentioned, is a valuable adjuvant to the sulphur in some cases.

In ptomaine poisoning half ounce doses may be required. In the majority of diseases small doses gradually increased yield the best results. Many cures have been accomplished by one to five drop doses three or four times a day. Horses seldom need much larger doses than men.

If the stomach rejects *diatheion,* or if hemorrhoids complicate, it may be administered per rectum. *Diatheion,* both in its amorphous and crystalline solutions, acts well externally, especially in skin diseases.

Diatheion contains no acid or alkaline solvent, therefore sulphur cannot be precipitated from it by ordinary means, as from soluble alkaline compounds. A few drops of acetic acid added to dilute solutions of such alkaline compounds will precipitate insoluble sulphur. There are four preparations of *diatheion*—the plain crude form, *diatheion crudum;* the dark red amorphous, *diatheion rubrum;* the yellow crystalline, *diatheion flavum;* and the black, *diatheion nigrum,* which latter has been chiefly used as an ointment in malignant ulcerations, with doubtful effect.

The amorphous *diatheion rubrum* is generally the most useful, but there are conditions which are best overcome by the crystalline which should be resorted to when the amorphous fails. The crude is valuable as a vermifuge, in ptomaine poisoning, for sulphur baths and other external uses, and it is possibly a better antidote for reptile venoms.

If *diatheion* had no other value than its decided influence upon a large majority of cases of chronic cystitis, that alone is sufficient to make it an invaluable and welcome addition to our medical armamentarium.

Suit Protector against Live Wires.—Professor Artemieff, director of the Electrotechnical Institute at Kief, Russia, has invented a suit which is an effected protection against live wires. The suit consists of a closely woven net work of metal fibres lined with linen which completely covers the body from head to foot, and is worn outside of the ordinary clothing. The mask which covers the head does not materially influence the eye sight. The outfit is especially valuable to those whose business is the mending of live wires. Experiments show that 200,000 bolts make no impression on either the wearer or the outfit. The suit is manufactured in Berlin.

THE CURABILITY OF TUBERCULOSIS.

BY GEORGE R. WILSON, M. D.

YEARS ago, while a student of medicine, I was very much impressed with a statement made to our class by the late Henry F. Formad, who, while our demonstrator of pathology, was also coroner's physician. He said that he was astounded in making autopsies for various reasons to find how many tubercular lesions had started and been arrested. I forget now in what proportion of cases he found these arrested tubercular processes, but it was no inconsiderable one. For fifteen years, probably, after Koch's demonstration of the bacillus tuberculosis the profession and the laity were sunk into a condition of depression in regard to the prognosis of tubercular diseases. It was accepted as a condition which could not be avoided, and hence it should be ignored as far as possible. And yet Laennec, many years ago, wrote "of all chronic diseases, tuberculosis is the most curable." At last the profession and the public have become aroused to this condition of affairs, and great efforts are being made all over the world to reduce to the minimum the evil effects of tuberculosis, if not to eliminate it entirely.

Graucher, the professor of clinical medicine, in the Faculty of Paris, has recently confirmed the statement of Formad in regard to the prevalence of tuberculosis. He believes that the frequency of tuberculosis is undoubtedly far greater than is usually thought, and to support this statement, he cites the official statistics of the mortality in France. According to these figures, the total mortality, from all causes, is twenty-two per one thousand per year; of this number three or four deaths are due to tuberculosis, or about one-sixth of the total number of deaths. Yet, on the other hand, it has been found that about sixty per cent. of the bodies opened at the various morgues contain tubercles; yet these individuals have all met with violent deaths; usually not after illness, but in a state of good health. From this data, Graucher believes that sixty per cent. is not far from the proper proportion of tubercular individuals in the Parisian population. Picini has verified this by taking the ganglia from the bodies of persons who have died from diseases other than tuberculosis and inoculating guinea pigs, and found that as a result that tuberculosis killed forty per cent. of these animals. Probably three hundred people out of every thousand have the bacillus tuberculosis somewhere in their organization, although it may be doing no harm. Nor is the disease confined exclusively to cities. in this connection, Graucher has made some interesting observations on the wide difference found in the different parts of France.

Graucher has made a careful inquiry in two departments with which he was closely connected,—the Creuse and Cote d'Or. He interviewed the local physicians, who are in excellent position to estimate the sanitary condition of their region. In the Creuse there is not a hamlet nor a group of houses, into which tuberculosis has not penetrated; on the other hand, in the Cote d'Or this disease is rare, but then the Cote d'Or is a rich country, where the peasants have big houses with large rooms, and where the conditions of life are easy, whereas the Creuse is a poor country from which the inhabitants emigrate, between thirty and thirty-five thousand going each year to Paris, where many of them contract tuberculosis and bring it back to their homes. The difference in the sani-

tary conditions of the two regions is therefore easily accounted for by the social conditions.

In order to know how nature cures tuberculosis it is necessary to make a careful and rational study of her methods. In the first place, there are two elements on the destructive side of tuberculosis, the action of the bacillus itself on the tissues, and secondly the action of its toxin. First, as to the peculiarities of the bacillus itself; when Koch demonstrated its existence, he found its two most marked peculiarities were its resistance to coloration, and its equal resistance to discoloration, which led him to suppose that the substance of the bacillus is protected by a hard exterior covering, difficult to pierce. As a result, this protection keeps the bacillus from being injured or altered by external influences and also retains the substance it secretes even a long time after the bacillus dies. Consequently, dead bacilli may produce the same local effects as living ones, due, of course, to its secretions, and not to the action of the bacillus itself. The only differentiation that can be made is that the lesions of the dead bacillus remain in the place where the infection occurs, for the dead bacilli do not multiply, and the process becomes generalized. As soon as the bacillus gains access to the organism of man, it sets up cellular re-action, culminating in the formation of a tubercle.

As it has been demonstrated that dead bacilli can produce these results, it naturally follows that the real danger lies in the toxin, and not in the bacillus itself. In actual practice it is not sufficient to destroy the tubercle bacilli in an organism, but we must also remove them, or, if that is impossible neutralize the effect of their poisons. It was this which Koch attempted to do some twelve years ago with his tubercular antitoxin. This ideal condition is, unfortunately, still in an embryonic state, and until it is solved for us by the pathologists we must depend upon nature's method to cure this dread disease. The bacilli which float about have all been acted upon by Nature's processes. There is no doubt that a very large proportion of the bacilli floating in the air are either dead or their virulence is weakened. Dessication, or putrefaction, destroys the power of bacillus to vegitate, while there is no doubt that the sun's rays have a distinctive power on this organism.

The curative process of nature is undoubtedly seen in the tubercle itself, which has a twofold tendency toward destruction and restoration.

Two theories exist as to the histo-genesis of the tubercle; the old theory attributes the chief part to the fixed cells of the tissue in question, whatever that tissue may be; the other, more modern, claims that the migratory cells only take part in the histo-genesis of the tubercle, and that all the cells of which it is composed are derived from the leucocytes or are modified leucocytes. The cellular reaction comprises three phases. In the first, the bacillus, whether it has come to a halt in a vessel, or has been carried through a vessel by a white globule, undergoes the onslaught of the polynuclear leucocytes, whose purpose is to surround and destroy the bacillus. This end, however, which they accomplish in the case of a large number of other microbes, is not reached with the tubercular bacillus, which is able to resist, no doubt owing to its protective sheath, and which also, by means of its tuberculin, destroys a large number of the phagocytes that have attacked it. In a second phase, the fixed cells of the tissue enter into action, and their activity is shown by the quantity of forms of karyokinesis we perceive; but they are no more successful than the foregoing in destroying the bacilli, their efforts resulting only in the formation of a barrier about them.

The third phase starts with the arrival of the large, mononuclear leucocytes, destined, no doubt, to reinforce the fixed cells, to aid and supplement their action, and also to surround those that have fallen in the struggle.

The result of these intense, cellular reactions is the formation of a tubercular follicle composed of epithelioid cells and of one or several giant-cells.

Whether these cells originate in the leucocytes or in the fixed cells is more or less a matter of indifference to us; the point that does interest us, however, is to see that the organism does not retreat in the face of the bacilli, but produces these defensive cells and fights with great energy.

Whatever may be the opinion concerning the two theories, there is one point on which they both agree, and that contains the whole of the hygienic therapeutics of tuberculosis; it is, that the result of this cellular activitiy is the formation of a fibro-caseous neoplasm, the caseum in the centre, containing the bacilli, and surrounded by a fibrous envelope, tending to isolate them from the rest of the organism, the fibroid process being the curative one.

Next in order comes the discussion of the method by which the tubercle bacilli can invade an organism. Undoubtedly, they can follow any path, even to penetrating healthy mucous membranes. An inflamed mucous membrane, it is well known, affords an easy entrance for the bacilli, although such an inflammation is not necessary. The mucous membranes of the nasal focci and larynx being accessible to the dust of the air, frequently show the presence of this bacillus in persons who are in perfect health, although in contact with consumptives. Fortunately, the nasal mucous has microbicidal propensities and also undoubtedly sweeps the bacilli away mechanically. Unfortunately, these bacilli find favorable surfaces in the depths of the tonsils from which the disease spreads to the cervical glands following the lymphatic chain until the disease becomes generalized. Similarly the disease may enter the organism by the intestines, affecting first the mesenteric glands. As in syphilis, this disease first affects the glands. When other tissues, such as the bones and joints, are affected, tuberculosis has a tendency to stay in one place, and to cure itself spontaneously.

The problem to-day is to place the patient in such a condition that tuberculosis will be fought by all its natural enemies, building up the constitution with the free use of sunshine and fresh air. A person who becomes tubercular while in a good state of health gives a deadly struggle to the work of the bacillus. Nature at once sets to work to overcome the bacillus in fibrous tissue. Let us remember the best remedy for tuberculosis is good health.

The recent gift of Mr. Phipps to establish in Philadelphia a great institute to study and treat tuberculosis on a tremendous scale has been a wonderful stride in medicine, and taken in connection with the sanitariums in the mountains of Pennsylvania, will afford in a few years most important data in the wholesale treatment of the "White Plague."

Dr. Stockdale, superintendent of the White Haven Sanitarium of the free hospital for poor consumptives,

writes of his institution in the July issue of the Pennsylvania Medical Journal as follows:

At present we have 100 beds with a large waiting list. With all these patients we have a staff of but eight employes with one resident physician. We give our patients from four to six quarts of milk and from six to twelve fresh eggs daily. I know of but one institution that is so economically conducted, and yet our food is invariably of the best quality and the quantity is never limited.

As to fresh air, we insist on all whose temperature permits staying out doors from eight to twelve hours daily. All are provided with reclining chairs placed on porches or protected from the winds and wrapped in warm blankets and given foot warmers when needed. If properly wrapped up the patient can be made comfortable in spite of all elements and it is this sitting out that hardens the patients, gives them the appetite to take our forced feeding and makes them sleep well at night.

On forced feeding every patient is compelled to take not less than four quarts of milk and six fresh raw eggs daily, and many take six quarts of milk and twelve eggs daily, a few even more. On the question of taking milk, I would like to say that I have seen many patients abroad and in Colorado refuse milk because it "upset them," as they said, and so prominent a physician as Dr. Knopf says many are unable to take it, but of nearly 400 cases treated at White Haven we have never had a case whom we did not ultimately induce to take the milk diet and yet a big percentage had never drank it before coming, proving that if given properly and of the right quality, which is the essential point, anyone can take it.

To keep our milk right we insist on the dairies supplying us conducting them according to our orders and we personally inspect them to see that our instructions are carried out.

To our minds no patient has much chance of recovery who cannot take forced feeding, and to make this possible it necessitates the best of food, the highest grade of cooking, and a carefully selected menu. Our breakfast is a light meal served at 7 o'clock, consisting of fruit, cereal, coffee, milk, raw eggs and rolls. At 9 o'clock a lunch of milk and eggs is served, and at 12 o'clock dinner, which is the only heavy meal of the day.

Dinner consists of soup, with beef steak or roast beef, with lamb and mutton occasionally, merely for a change; those vegetables such as potatoes, stewed onions, macaroni and cheese, rice, carrots, turnips, beans, etc., and in summer fresh vegetables. A desert is served of some plain pudding contaiing milk and eggs, and on Sundays and occasionally during the week ice cream. No fancy pastries or pork or veal are served, but ham and cabbage we find if boiled not less than four hours.

At 4 o'clock a lunch is served of milk and eggs and soda crackers, and at 7 o'clock, supper, which consists of either boiled rice, mush and milk or Irish stew, etc., with milk and eggs, tea and cream cheese and crackers. Butter is always served in abundance and all are encouraged to eat as much as possible of it. We only limit the minimum quantity, never the maximum, and we insist on the patients eating their dinners whether disposed to do so or not.

Temperatures are taken at rising and bed time, also pulse rate and a careful record chart is kept of these with quantity of eggs taken, hours at cure, bowel movement, etc.

The patients are divided in three squads each under a captain who has lieutenants to assist him. They eat at separate tables, do all their own work as to housekeeping, etc., except of course cooking.

They are divided into three classes; the first class doing the heavier work, the second class light work, the third class complete rest. The work therefore is divided to suit each class, and each patient, unless in the third class, must do his or her share of the work. After breakfast each patient is seen personally and his record chart scanned, and if there is a rise in temperature or pulse he is put in the third class for that day, and if temperature is above 100 degrees is put to bed. By carefully watching the record chart, colds can be checked at the start and the patient guarded against any serious development; upset stomachs are carefully looked after and the smallest detail receives careful attention. None are allowed to move about with a temperature above 99½degrees and above 100 degrees they go to bed until temperature becomes normal.

All our patients rest in bed not less than 10 hours. All windows are kept wide open. No attention is paid to draughts. All are weighed weekly and weight recorded. Some of the weights are remarkable—many gain over 20 pounds the first month, and one man has gained 23½ pounds in 25 days. I distinctly remember a case at Falkenstein who gained 12 pounds in a month, and he was the show patient of the institution and all wanted to see him. At White Haven we have had the same gain in one week. Dr. Walther, at Nordnack, always has the largest gains in Europe, but they have never yet reached records we have made.

The secret of our success is our method of feeding and the careful individual attention the patient receives, and our rigid rules to which there is no unbending and to which all must adhere or leave. The patients soon fall into this routine when they realize it must be done and after the first few days find it far from a hardship.

The medication used is europhen in all cases, varying tonics to aid digestion in most all cases. Expectorants when having a cold and creosote in all cases with mixed infection. Whisky is never given.

With this treatment the cough and night sweats disappear and the patient gains weight. For hemorrhages nitroglycerine is used, and as a precaution against them it is also given where there is an accentuation of a pulmonary second sound of the heart. With this practice we have been very free from hemorrhages.

The sanitary regulations are most exacting. All are provided with sputum cups which holds a paper cup into which they must expectorate. They also have paper napkins to use when the cup is not at hand and the paper is put in a bag, all of which is burnt twice daily. Spitting on the ground is made a cause for expulsion.

The result proves that tuberculosis is curable under the poorest surroundings if given the proper food and plenty of fresh air and proper supervision.

—Dr. C. Rasch, of Kropp bei Schleswig, Germany, is agitating the necessity of establishing a home for physicians convalescing from diseases and also for the superannuated, with, possibly, a view to including the members of physicians' families in its projected benefits. Our German exchanges endorse the necessity for such an institution "on account of the growing financial distress of our profession," and hope that the seed will fall on fruitful soil.

NOSE BREATHING.

BY CLARENCE WARFIELD, M. D., SAN ANTONIO, TEX.

THE nose is not only the essential organ of smell, but of equal importance is its respiratory function. It is the real guardian of the mucous surfaces back and below, as well as to the air passages extending to the alveoli of the lungs.

Roughly taken anatomically, we have the nasal cavity, composed of skin and muscular tissue on the outside, covering numerous parts of different bones, and mucous membrane on the inside, with three turbinate bones to each nostril; with a septum composed of a triangular cartilage in its anterior portion, and a blade of the ethmoid bone and the vomer in its posterior.

Kirk says "the first conditions essential to the sense of smell are a special nerve and nerve terminations in the form of special cells, the changes in whose conditions stimulate a special nerve centre, and are perceived in sensations of odor. The matter of odor must in all cases be dissolved in the mucus of the mucous membrane to render it capable of affecting the olfactory nerve. Therefore, it is essential to the perception of odor that the mucous membrane of the nasal cavity be moist; when the Schneiderian membrane is dry, the sense of smell is impaired or lost.

"In the first stage of catarrh, when the secretion of mucus within the nostrils is lessened, the faculty of perceiving odor is either lost or rendered very imperfect. The sense of smell is derived exclusively from those parts of the nasal faculties where the olfactory nerves are distributed. All parts of the nasal cavity, whether or not they can be the seats of smell, are endowed with sensibility by the nasal branches of the first and second divisions of the fifth nerve. Thus sensations of cold, heat, pain, etc., are perceived. These nerves cannot perform the function of smell, because when the sense of smell is lost, the mucous membrane of the nose may still remain susceptible with various modifications of sensation and touch."

Zucker Kandel describes the mucous membrane covering the turbinated bodies as consisting of connective tissue, the outer layer covered with flat epithelium, the deep layer forming the periosteum of the turbinated bones. Between them are lymph tissue, lymph glands, the mucous glands. Within the lymphoid tissue there are abundant venous plexuses, which he calls "swell bodies." The venous knots give the tissue the character of erectile tissue. These "swell bodies" are located along the free border of the inferior turbinate, the lower border of the middle turbinate, the posterior end of the border of the middle turbinate, the posterior end of the superior turbinate, the posterior end of the middle turbinate, and the posterior end of the inferior turbinate bones. Their chief function is to humidify and temper the air, so that its presence in the lower air tract will not excite irritation. During the respiration of moist, warm air, these bodies contract, and throw out less heat and moisture. The inhalation of cold, dry air causes an output of heat and moisture, and a corresponding swelling as a protecting barrier. Ordinarily from fifteen to twenty ounces of serum are thrown out in every twenty-four hours. This is absorbed by the warm and expanded air, and carried to the lower air tract.

The trachea and bronchial tubes are supplied with but few glands, and are dependent on the moisture thrown out in the nose. The interior of the nose is so constructed that the inspired current of air passes over a large, moist surface of mucous membrane. There are about twenty-six square inches of surface thus exposed, and the dust and other foreign particles in the inspired air are deposited and discharged into the nasopharynx or through the anterior nares. The lower respiratory tract is thus protected from irritation which the dust-laden air would otherwise produce. Germs are also rendered non-pathogenic by the bactericidal properties of the nasal secretion.

From the above considerations it is seen that the respiratory functions of the nose are to humidify and temper the inspired air. The proper performance of this function is of vital importance to the health of the individual. It has been well proven that transient, but recurrent interior nasal stenosis is attended by rarefaction of the air in the nasal fossa posterior to the obstruction during inspiration. This rarefaction causes hyperemia of the mucosa (especially the erectile tissue) of the nose and nasal pharynx. Chronic hyperemia may ultimately follow and be attended by hyper-nutrition, hence hypertrophy of the parts.

Any growth or formation which may close the superior, the posterior and middle meatuses of the nose, compels the inspired air to traverse the inferior meatus, wherein it is not sufficiently humidified. It passes into the pharynx too dry, and abstracts moisture therefrom, irritation naturally results.

C. A. Parker has conducted a series of experiments to determine the current in nasal respiration, a summary of which is as follows:

During quiet inspiration in a normal nose, the air traverses the middle, superior, and probably the fourth meatus. Inspiration is impaired by:

1. Spurs and deflections of the septum, or enlargements of the inferior turbinated body, if they project forward and upward.
2. Enlargements of the middle turbinate, polypi, etc.
3. Hypertrophies and growths springing from the vault of the naso-pharynx.

In expiration the air traverses chiefly the inferior meatus. Expiration will be more specially affected by hypertrophy of the middle end of the inferior turbinate; hypertrophy causing stenosis of the inferior meatus,—which seems to be borne out from the fact that on inspiration we differentiate odors, the inspired air coming as it does in direct contact with the olfactory bulb, and the expired where the nerves are scarcely in evidence.

As a consequence of the impairment or loss of nasal inspiration, the mouth and pharynx but feebly perform the respiratory functions of the nose, being lined with mucous membrane containing glands, whose functions are but to moisten, not to temper and filter, as are those of the nose.

The mucous membrane of the larynx, trachea, and bronchial tubes are thus irritated, and manifest a catarrhal tendency. The epithelial cells lining the air vesicles—of which there is but a single layer—become also irritated. The cells at first swell and pile up until the lining is from two to twelve layers deep in places; the cause of this is the diminished amount of oxygen absorbed by the blood. Uric acid, etc., are freely formed, and circulate through the system. There is a retardation in the elimination of carbonic acid gas; in other words, carbon dioxide is accumulated in excess in the blood, and being in excess, acts as a violent poison to the leucocytes, thereby impairing their function. Malnutrition results in

physical imperfection,—irritants accumulate in the blood, which in turn cause peevishness, restless nights, and bad temper. This impairment renders the patient an easy prey to microbic infection.

Races of people or individuals who have prominent and narrow noses are more liable to catarrhal affections than those who have wider nasal chambers. The Hebrew races are very frequently afflicted with chronic rhinitis, while negroes are rarely thus affected. Temperate zones predispose to catarrhal conditions, as do also great bodies of water where the atmosphere is subjected to frequent and radical changes in temperature and humidity.

Nasal catarrh occurs more frequently in males than in females on account of their being outside and exposed more. Inhalation of dust-laden air or vapors also predisposes. The most frequent cause of chronic inflammation of the Schneiderian membrane is anterior nasal obstruction, which causes a rarefaction of the air in the nasal chamber posterior to the obstruction. These conditions lead to chronic engorgement or tumefaction of the erectile tissue. The vasomotor control of the erectile tissue is in turn impaired or lost.

Conditions giving rise to anterior nasal obstruction are flat or indrawn nasal alæ, spurs, ridges, and deflections of the septum. One of the first things to be done in connection with any ear trouble is to get the nose in a healthy condition, removing all adenoids, enlarged tonsils, or any nasal obtsruction, and alleviating any nasal catarrh that may exist.

Nasal obstruction in the new-born, Leopold Caavean considers, is due mostly to superficial lesions of the nasal orifice, acute coryza in eruptive fevers, pseudo-membranous coryzas, and those produced by foreign bodies, syphilis, adenoid growths, retro-pharyngeal abscesses and congenital occlusion.

T. R. Reynolds states that by successful treatment and permanent relief of nasal stenosis, many diseases are prevented, relieved or cured, among which are anemia, marasmus, hay fever, asthma, laryngismus stridulus, gastralgia, cardiac palpitation, migrane, caphalagia, vertigo, photophobia, and many other conditions often accompanying nasal stenosis.

J. R. Goodale states that he has met with many cases of chronic laryngismus in children due directly to the result of nasal obstruction.

Dr. Levy, speaking of neurosis in connection with nasal affections, says that he had a case in a woman who complained of dizzy sensations, feeling of anxiety, dyspnœa, sleeplessness, pain in all the parts, and severe abdominal pain—which after the removal of a polyp in the middle turbinal space, and the reduction of the swelling in the interior turbinate, resulted in complete recovery.

Relative to the effect upon the ear from the different causes of obstruction in the nose, suffice it to say that in the catarrhal variety, the hearing is adversely affected by cold in the head. Now it is just these cases that require care and discrimination in regard to nasal therapeutics of any kind. In the catarrhal form of ear trouble, we find on inquiry a history of repeated deafness following cold, each exacerbation leaving the hearing permanently worse. There is more or less evidence of nasal and naso-pharyngeal catarrh, while the tympanic membranes are thickened and indrawn and the eustachian tube may be more or less obstructed. Needless to say, the first proposition to consider is the use of proper remedies to benefit the condition of the nose and naso-pharynx as a cause, in addition to treating the condition in the ear as an effect.

C. H. Baker (Philadelphia Medical Journal, 1901), after reviewing the anatomy of the middle turbinated bone, says that pathological conditions of this bone often result in reflex sensations, causing asthma, vertigo, etc., and that it ought to be removed whenever it interferes with free drainage from the cavities, whenever it is markedly hypertrophic, pressing hard against the septum, and in many atrophic cases, where it appears to be the focus of infection; and very often, even if it does not entirely cure, it will greatly moderate the severity of the symptoms.

Lafayette Page, of Indianapolis (Annals of Rhinology, August, 1901), speaking of diseases of the outer air passages in relation to mental development, says the two chief conditions within the organism which may retard mental development are: an impure or imperfect blood supply to the growing nerve centers and overstimulate from abnormal conditions which may exist in any organ of the body. That this would be a favorite region for the lodgment of germs and elaboration of toxines from the pathological conditions, would be obvious to every one who has worked in this region. The respiratory tract in disease is a favorable soil for the development of toxines, as they may be easily absorbed into the circulation owing to the great glandular supply. We can readily understand how defective drainage and pressure in the nasal fossa, causing swelling and stasis in the veins and lymph channels, would affect the brain's functions. It has also been shown that an equally important relation exists between certain venous regions of the nose and the interior of the skull. We sometimes see a rapid toxicity following a slight cauterization of the mucous membrane with the electro-cautery. Frequent enlargement of the glands of the neck, associated with chronic nasal catarrh, indicate a constant toxic absorption from this disease. In the various forms of abnormalities and disease of the nasal fossa, and the often accompanying affections of the digestion, we have all the conditions present which favor septic generation and absorption. Engorgement of the erectile tissues, the various irregularities of the septum, occluding the orifices of the adjacent sinuses, polyp, etc., are the common forms of obstruction,and are often apt to lead to putrefactive changes.

The changes which take place in children whose mental development has been retarded, after securing proper nasal drainage, are so marked that the change in expression may be noticed in a few weeks—from a dull, despondent air to one of happiness. The constant night terrors and dreams which haunt the sleep of these children disappear, and refreshing sleep at once follows the removal of irritation.

J. A. Thompson (International Clinics, 1896), speaking of hypertrophied pharyngeal tonsil having a deleterious effect on the general health by stopping up the posterior nasal cavities, preventing nose breathing, and causing the respiratory effort to be made through the mouth, says that there is a constant irritation by the cold, dry, dust-laden air of the larynx, trachea, and bronchial tubes. The history of many of these cases shows that there is barely a recovery from one attack of acute bronchitis before another is set up. Careful examination of the lungs in many cases shows a low degree of development of the bronchial tubes always present.

It is necessary in osmosis that the membrane separating the liquid or gas, through which the change is to be effected, should be moist. In these mouth breathers the air is not properly moistened and warmed in the nose as it should be. The respiratory function of that organ is abolished, and the air enters the alveoli too dry and too cold. The abnormal, dry, and congested condition of the alveoli prevents the normal, free interchange between the oxygen of the air and the carbonic gas of the blood. The supply of oxygen in the blood being thus rendered defective, all the chemical changes which make up the complexus of nutrition will be interfered with from lack of the necessary elements. On account of the co-existing dyspepsia, the food in the digestive tract is not properly prepared for absorption. Such as is absorbed has further nutritive changes interfered with on account of the lack of the supply of oxygen.

Kyle states that the shape of the nostrils has much to do with the so-called catarrhal diathesis. Frequently patients will say they have inherited catarrh, when in fact they have inherited the family nose, so shaped that the least congestion of the mucous membrane closes the nose by narrowing the lumen of the nares, and lessening the room in the nasal cavities. Situated as is the mucous membrane in this locality, it can extend in but one direction, and that is toward the lumen of the air passages. The free passages of air and perfect drainage are interfered with, causing an accumulation of secretion, which by its presence irritates the mucous membrane and produces some form of rhinitis. Too much importance cannot be attached to nasal breathing. Many cases of disease of the nose and throat, causing mouth breathing if continued for any length of time, produce a marked effect on the general health. This is especially true in children, and should be corrected early. If interference is not prompt and effectual, the obstructed nasal breathing with a continuance of enforced snuffling inspiration so often seen in these cases, may cause a drawing down of the facial muscles, not only changing the child's expression, but often altering the shape of the jaw. The hard palate, instead of forming a perfect dome is moulded into a high arch. The shape of the framework of the bones, especially the floor of the turbinated bones, will determine largely the drainage—whether it go forward or backward.

The changes produced in the blood are well shown in a series of blood counts, which he made in cases in which there was nasal obstruction, the counts being made before and after the removal of the growths. In every case before removal the red blood corpuscles (the oxygen carriers) were reduced to three millions, in some cases as low as one million, five hundred thousand, with the hemoglobin reduced to fifty or sixty per cent. of normal; and in many cases with a slight increase of white corpuscles. After removal of the obstruction, both hemoglobin and corpuscles quickly increased to the normal.

This may seem a paper of quotations—be that as it may. There are so many little points of importance that have been brought out by investigators, that oftentimes it behooves us to avail ourselves of the results of their efforts, in order that we may as concisely as possible, and without a waste of words, make clear to those who are interested in such matters the sense only, reserving the details for those who have time to read them.

Nine persons out of ten are mouth breathers. These same nine persons will assert to you in all sincerity that they never breathe through their mouths; and even as they talk to you, if you watch them closely, you will note in the majority after three of four sentences, a deep unconscious inspiration is taken—particularly in those who are given to talking rapidly. These conditions most frequently prevail in those who have normal nasal appendages, or nearly so. They do not breathe through their nostrils because they particularly wish to, but most often that there may be no hesitancy of speech or break in the conversation, the air passing in greater quantities on inspiration through the mouth, while the stopping to inspire through the nose retards rapidity in conversation, unless one is especially adept. The habitual mouth breather we always recognize at first sight. As we have said before, some condition blocking the nasal passages anteriorly or posteriorly is the cause, giving the appearance of a drawing down of the nasal alæ, and a relaxing of the muscles of the lower jaw.

It seems reasonable to believe from the foreging statements that an individual with no predisposition to tuberculosis from hereditary influence— baring attacks of pneumonia and la grippe, which so often leave the apices of the lungs in such a weakened state as to be unable to resist infection—that this individual might, with a comparative feeling of security, breathe and re-breathe, in a more or less densely laden atmosphere, tubercle bacilli in quantities, provided every respiration were taken through a normal nasal passage. I think in many instances infection takes place, even in such an individual as I have mentioned, by an occasional slip in breathing through the mouth in more or less rapid speech; and yet it would be a difficult task to make this man or woman appreciate that they had breathed in any other way but through the nose. Nasal breathing acts as a preventive to the introduction of these germs into the lungs below. How many people with incipient pthisis really know that as an important aid to their eventual recovery, nose breathing takes first place How many people with laryngeal tuberculosis would not have held these bacilli at least in the lung tissue if they had only followed this rule, thus relieving nearly all the irritation from the larynx, we can only conjecture .

True, in many instances patients with more or less involvement of the lung, feel a want of more air than the normal or diseased nasal passage affords. They are thus led, possibly against their inclination, to mouth breathing in order to supply the increase in quantity felt to be necessary. If they would only stop to consider that this air hunger comes on mostly from over exertion, and the inability to pump into the diseased lung sufficient oxygen to keep the vital machinery going, they would exercise themselves less, and breathe through their noses more, in order that they might eventually increase the exercise without feeling the necessity of drawing upon that other organ, whose principal function is to attend to the needs of the alimentary tract, and not do his breathing.

If you have not given nose breathing much thought, walk the streets any hour of the day, and watch the mouths of the people going to and fro. After a while, you will be converted to the opinion that nine out of every ten persons are mouth breathers at times, the majority of whom have simply formed the habit for lack of something better to do, having the power to breathe where nature intended them to; but from an absolute lack of knowledge of the importance of this important function, they take in through their mouths in their daily rounds germs of every kind, class and description, which readily

find a lodging place in any abraded surface in the mucous membrane from the lips to the alveola of the lungs; whereas had they ever appreciated what it meant, and breathed through their noses, little chance of this infection would ever have presented itself.

Is it any wonder, then, that people are not, as a rule, healthy in the true sense? We recommend gymnastics, calisthenics, exercise in the open air, sun baths, water baths, etc., as imparting to the one who partakes thereof both physical and mental force, which they most need to build up their constitutions; but we overlook the fact that without proper nose breathing, these otherwise essenitally good therapeutic agents do little good in reality. If the blood count and the hemoglobin can be diminished one-half by breathing through the mouth, as Kyle states, and return to normal when nose breathing has been re-established, this fact alone should place the study of systematic nose breathing in all our schools and colleges upon the highest plane, as taking precedence of any one subject along the lines of hygiene that are taught to pupils in the present day.

We must not overlook the importance of watching our children. The early correction of mouth breathing may make, what would otherwise mar, the career of some one now growing to be a great man. After the habit of mouth breathing has been firmly establishel, it is naturally more difficult to control; but when corrected in early childhood, there is little necessity for further consideration through the balance of life.

In conclusion. I merely wish to repeat, do not forget that the glands of the nasal cavity sift out impurities from the air you breathe, moisten and temper the same to practically the temperature of the mucous surfaces below, thus preventing any shock whatever upon contact, and allowing the entrance of air that is as pure as it is possible to get under given circumstances. Nor overlook that the glands of the mouth and throat have no such function, and that in breathing through the mouth you have violated a law of nature, for which you will eventually pay with ten-fold interest.

The Cleanliness of the Japanese.—We have heard much about the cleanliness of the Japanese—that with them cleanliness was even above godliness. In view of this rather firmly rooted conviction, the revelations of Mr. Walter Del Mar, in his recent book "Around the World Through Japan," come as a distinct shock, says the *Medical Examiner*. Mr. Del Mar states that the cleanliness of the Japanese is a purely technical one. It is true that the custom of taking at least one hot, steaming bath a day is almost universal. But the Japanese rarely wash their clothes. Laundresses would fare badly if they depended upon the Japanese people for a living. Hence Mr. Del Mar concludes that the hot both is taken only for its soothing effects upon tired muscles and stiff joints, and as a protection against rheumatism and fevers. The Japanese have a prejudice against the use of soap. Although they insist that the water in which they bathe shall be hot, they are not at all particular about it being clean. It is the custom for one member of the family after another to bathe in the same tubful of water. The male head of the house has the first turn, and after all the males have bathed in succession, the females follow in their order. Even then the water is not allowed to run to waste, but is used the next morning to wash the woodwork, being preferred for that purpose to clean water.

MALIGNANT UTERINE DISEASE.

BY WM. WORMLEY, M. D.

THE comparative frequency of the existence of malignant disease of the womb has been settled by the figures of Emmet, who reports that out of 4,600 cases of disease of women 113 from every grade of society had malignant disease of the uterus, or 2.45 per cent. It is not difficult to diagnose their existence in the uterus in advanced stages, although some obscurity as to the variety may exist. There is the peculiar sharp, inconstant, lancinating pain in the abdomen, back and thighs; the discharge of watery fluid with a characteristic odor; the presence of hemorrhage and cachexia. The immovable uterus, the cervix large, hard and patulous, the abundant nodules, hard, inelastic, immovable, together with the extensive ulceration, the probable presence of exuberant granulations if not cauliflower excrescences, with their friable, easily bleeding characters, tell a story hard to read wrong.

But unfortunately it is in advanced cases that diagnosis is least important, for the chances of palliation from operative treatment is less than earlier in the disease. The time proper to diagnose cancer is at the outset, when there is a chance for thorough removal. It is here that the average practitioner is generally weak. Lack of confidence in his power of diagnosis, or from an impression that no benefit would be derived from treatment, and even from a personal distaste for vaginal examinations and long disuse of them, malignant disease of the uterus is too often allowed to go through a most important period unrecognized and untreated.

But let the doctor take plenty of time, secure a good light so that he can see clearly, let him see the case on his office chair if possible, not with the hips hidden in a bed, in a wretched light, and only a few cases of malignant disease will make considerable advance without suspicious symptoms.

Among the early symptoms, it is the bleeding which generally first attracts attention. If menstruating, the woman will lose more at her period or may bleed between them. If menstruation has ceased, the occurrence of even slight hemorrhage should lead to careful examination; the cause may be fungous endometritis, a fibroid or polypoid tumor, still on the other hand evidence of cancer may be found.

This discharge is irregular in its nature and is increased by exertion, consisting either of bright blood or of a bloody watery fluid, with or without odor. Leucorrhoea may also exist. Usually there will be some evidence of impaired vitality and loss of tone in the patient; though a true cachexia, with its dead-white, or straw hue of the skin, its pinched and peculiar expression, comes later when the disease is well established.

While the earliest symptom is in some cases pain, yet others will pass through all stages of the disease and remain remarkably free from it. Many doctors can remember cases where the diagnosis of advanced epithelioma does not admit of question, and yet pain has never occurred in any considerable degree.

Again, but slight pain may be present and that not characteristic. In epithelioma rather than in the interstitial forms of the disease, pain is more apt to be severe, especially when the infiltration passes beyond the cervix to the body of the organ, for infiltration of the surrounding pelvic tissues flings pressure on sacral nerves, producing severe pain in one or both hips and down the back of the thighs. The pain may come from nipping of terminal fibres of the sympathetic system within the cervix or body of the organ. It is the persistent pelvic pain, especially if lancinating and extending to the loins and back of the thighs, that should excite suspicion of malignant growth, particularly in women near the menopause. The offensive watery discharge of disorganization of tissue is not often a very early symptom, although characteristic when it exists. Offensive leucorrhoea from other causes is not uncommon, but there is no smell like the smell of a cancerous discharge.

Yet on the other hand, the absence of odor is not indicative of the absence of cancer. *This is the truth in regard to every symptom of the disease.* Examination will reveal more exactly the condition of affairs. In their order of frequency: Epithelioma, Encephaloid or "soft" cancer; Sarcoma are the common classifications.

The characteristic sign in epithelioma is that the finger finds the cervix harder than usual even in the early stages of the disease. The growth starts either in the mucous membrane of the cervical canal or on the vaginal cervix. If the former, the only fact discoverable by the finger will be an enlargement and hardening of the neck, while the os is enlarged and irregular. Ocular inspection may show nodules within the cervical perhaps covered by an ashy deposit. Their color ranges from pale yellow to dark red, according to the amount of blood infiltration. Their hardness is quite characteristic. The mucous membrane is bound down and immovable. Goodell who suggested that in such a case the introduction of a sponge tent will materially aid the diagnosis, says:

"If the cervix soften down, the os dilate, and the mucous membrane become movable under the expansion of the tent, the disease is probably a benign one. If, on the other hand, the cervix remain hard, its mucous covering immovable, and the os unyielding, the suspicion of malignancy will be confirmed."

The physician finds the curious fact that the uterus may remain movable, and scarcely enlarged, as the disease extends; while, as a rule advancing no higher than the cervical canal, a rough, friable mass occupies that passage, which, breaking down in the centre, may leave the cervix excavated, so as to form a large cavity extending to the internal os.

It is found that the edges of this cavity are often sharp, hard, and irregular. Pain may still be almost entirely absent. When beginning at the vaginal portion of the cervix, externally as it were, the epithelioma assumes one of two forms, either appearing as an ulcer with irregular edges and an excavated base covered with ashy-colored detritus, or else taking the form of a fungous mass. This mass of friable, rough, granular feel may be spread out over the cervix, or spring from it as a pedunculated outgrowth, forming the so-called cauliflower excrescence, recognized by the fact that it suggests the sensation that portions could be broken off.

The differential diagnosis consists in the fact that a polypus is usually softer and smoother, and a papilloma is less fragile, less irregular, and enveloped by a continuous epithelial coating. Two cases, seen by Shoemaker within a few weeks of each other, may be cited in illustration, one of fungus-like epitheloma, and the other of fibrous polypus: "Both women were beyond the menopause a few years. Both had some bladder irritation and pelvic uneasiness, but no pain. Both had borne children. Both had leucorrhoea. One of them had seen a little blood irregularly, and was pallid. In both, the only abnormal structure discoverable by the finger was a round pedunculated growth of about the size of a walnut, which grew from the cervix."

"The pedicle in each case was about half an inch through, was distinct, like the stem of a toadstool, but shorter; while the body of the growth in each case was roughened and firm. Diagnosis of malignancy was made in one case at once, reliance being placed on the following points: The uterus was not normally movable, and was slightly enlarged, as made our bimanually; the pedicle grew directly out of the lower lip of the cervix, and above it could be felt the os distinctly. No other growth would have been situated here. A polypus or a papilloma of that shape would have come out of the os. The whole tumor except the pedicle was covered by nodules the size of those on a blackberry, and was not smooth to the touch."

"No impression of flexibility or elasticity was conveyed to the finger, the whole growth having that indescribable dense feeling which is easily recognized as belonging to this class of growths. At the operation, as soon as the lower lip was cut away with the scissors, and the cavity of the cervix thereby opened up, it was found filled with very firm cancerous nodules of the size of a buckshot, or larger. This, of course, confirmed the diagnosis, but could not previously have been determined, for the os was not dilated at all.

"In the other case, however, though the general resemblance was so great, the diagnosis of benign tumor rested on the fact that the pedicle, springing from somewhere within the uterus, came out of the os and expanded as a perfectly smooth stem, covered by smooth membrane, and giving the impression of a tough, homogeneous fibrous structure, which would bend and not break. The body of the growth was resilient, though firm, and indented on the lowest surface like a papilloma."

The symptoms did not suggest malignancy, yet they did not exclude it. The very early diagnosis of epithelioma is all important. Though doubted by some writers, as Byford and others, there is very strong evidence to be brought forward in favor of the local and ,as it were, traumatic origin of epithe-

lioma. It seems in many instances to be a perverted effort of nature to repair an injury, as has been said by Emmet, and this gives a much greater significance to unhealed and irritated lacerations.

Whether the theory of traumatic origin be accepted or not, Emmet, a good authority, says that he had never seen a case of epithelial cancer in a woman who had not at some time been inpregnated. Still Hofmeier, in his statistics of cancer of the uterus, found 39 nulliparae among a total of 812 cases. It is the tendency of cicatrices to become the seat of morbid growths. The frequency of unrepaired lacerations, and the profound alterations of structure which often follow them, have led to careful microscopical study of the tissues which have been removed in the operations for repair, with the result of finding, as reported by Cushing to the Ninth International Medical Congress, several cases of undoubted cancer, which could not have been diagnosed from glandular hyperplasia and erosion by either sight or touch alone. This author has urged with great pertinency, that some cases of bleeding erosions in women of fifty, or thereabouts, are undoubtedly beginning epitheliomata, and as the removal of such surfaces in a slight operation, it is worth doing ,and may be of greatest importance.

It is unreasonable to claim that every erosion should be removed by the knife or scissors, for many of them can be cured by proper treatment; but it seems justifiable, to say the least, to remove thoroughly all those which are stubborn in resisting well-directed treatment. In doubtful cases much light may be obtained by removing a vedge-shaped piece for microscopical examination; for while malignancy cannot be thus excluded, it may be found. It cannot thus be excluded, for it has been shown that cases showing clinically evident signs of malignancy, and so diagnosed by excellent authority, still have failed to show typical characters under the microscope. No harm is done by this excision of a piece. The bleeding would be readily controlled by an alum tampon, operation could follow if malignant disease were diagnosed.

In encephaloid cancer the early diagnosis is rarely made. By the time obvious changes have occurred the disease has advanced so far as to have seriously infected neighboring glands and tissues, so that no removal is possible, this being true especially where the body of the uterus is first involved. The point of origin is generally near the lower end of the cervical canal, in the submucous tissue, which is destroyed by ulceration. The cervix exhibits a hard, irregular, and knotty mass, different from any non-malignant disease. Irregular friable vegetations spring up and cover the whole lower end of the cervix, bleeding freely on being touched, excluding a watery offensive fluid, like the washings of raw beef.

Genuine uterine sarcoma is uncommon. Its accurate diagnosis, either early or late, is usually impossible without the microscopical examination of a piece of sufficient size to show not only characteristic cells, but their relations to surrounding tissue. Scrapings may not be sufficient. It occurs in two forms: (a) Circumscribed, when it strongly resembles fibroid tumor, and constitutes the class formerly known as "recurrent fibroid." (b) Diffuse, when it involves the whole uterus, together with surrounding tissues and organs. The cardinal points in the diagnosis of sarcoma are rapid growth, a few months only at times; cachexia, especially significant where there has been comparatively little loss of blood; extreme pain; the presence of serum in the freely flowing blood; (which is not found in non-disintegrating fibroids, but is found in carcinoma); the soft, brittle, brain-like character of proliferating portions, if any can be felt. This separates it from carcinoma. Carcinoma is not so apt to form a circumscribed tumor. But, after all, the practical point is the diagnosis of malignancy, for early removal is the rule in any form of growth. Scirrhus anld myxo-sarcoma present no early signs of individuality which need be considered here. After all, there remain certain cases in which the early diagnosis of malignancy is practically impossible, and the decision for or against a radical operation becomes a matter of great anxiety to the physician.

When the disease is not accessible at the cervix, but begins within the body of the uterus, or even at the internal os, the excision of a piece for examination is not practicable in ordinary cases. One is then obliged to wait, perhaps too long, for some definite guide.

As regards the treatment of uterine cancer, this is strictly surgical. This does not mean similarly as in cancer of the breast, that every case of malignant tumor of the uterus is to be operated. There is room for judgment. One fact, however, is established beyond all question; it is that years of life and great suffering may be saved by early and radical removal, especially of epitheliomas.

If the operation is not done thoroughly, life may be shortened except in the later stages, or if the disease is still confined to the cervix and lower uterine segment, several operations may be made. One of the best is amputation of the vaginal portion of the cervix, and then with a knife cutting out a cone-shaped piece from the body of the uterus, including the canal, following with the Paquelin cautery. Emmet uses scissors, knife, and curette with Simon's spoon, to shell out the diseased tissue, and then, as far as possible has been cut away. The dangers after such operations are from hemorrhage and septicaemia, but the mortality is small. There is very strong ground for relief that the actual cautery lessens the risk of subsequent development of disease. It certainly retards it more than the knife if all is not removed. Total extirpation of the uterus is coming into prominence in this connection, and statistics are rapidly accumulating. By the use of compression forceps for the lateral vessels, instead of ligatures, the mortality of the operation has been enormously diminished in good hands, but the place of the operation in surgery of the uterus has not yet been definitely settled. There is very little to show its advantage in ultimate results over Schroeders method of high amputation of the cervix, where the disease usually lies, especially if followed by clearing out the interior of the uterus. If the disease is just beginning, the safer operation is just as thorough.

If the disease is further advanced, to remove the entire uterus is not to remove surrounding infected glands and tissues, and there are no statistics which show conclusively that the liability to return is less than in the other operation. On the contrary, while recent methods of total extirpation have undoubtedly greatly reduced the risk of death from the operation itself ,and while as long a series as thirty without a death has been reported, yet a consideration of the after-history of these patients favors a partial operation as of greater advantage.

The majority of gynecologists, who are more interested in the freedom from recurrence than in the operation mortality, will await the evidence of further experience, now rapidly accumulating.

For cleansing purposes in the general conduct of a case, an experience of a considerable number of cases leads to the preference of permanganate of potassium solution. It is cheap, non-poisonous, unirritating, and effective. Creolin is also very satisfactory. Hemorrhage, if not controlled by alum or other astringent, may often be arrested by pressure so applied by tampon as to bear directly upon surfaces, and not slide over them. It may call for the use of the curette and the hot iron if it is stubborn and considerable.

Opium, guarded by atropia, is the best remedy in the relief of decided pain, while other drugs help in insomnia and restlessness not caused by definite pain from nerve involvement. Of course the opium habit is by far the less among evils. No definite improvement has yet seemed to follow the use of drugs given for action on the disease.

Shoemaker gives the following summary, which is very clear and practical:

(a) Early diagnosis is all-important, and should not be deferred until gross changes have occurred.

(b) Examination should follow slight suspicions from the treacherous character of the symptoms. If not conclusive, it should be made by a trained hand.

(c) The microscope will sometimes detect before other means will.

(d) Heredity is a doubtful cause, traumatic origin very probable.

(e) Lacerations of the cervix, where the growths usually begin, should be repaired if causing irritation, and erosions should be cured. If erosions are stubborn, or otherwise suspicious, they should be pared off.

(f) In epithemlioma especially, the disease is at first local, and if taken early complete immunity is secured sometimes, and always great saving of time and suffering.

(g) From an operative point of view, there are three periods in any form of malignant disease:

1. Early, when operation should be immediate and as radical as possible, without extirpation of the uterus.

2. Intermediate when, eradication being impossible, nothing should be done unless demanded by severe hemorrhage or extreme pain. The length of this period is indefinite, and depends on the rapidity of the growth.

3. Late, when scraping and burning may be done repeatedly, to palliate symptoms and retard growth.

THE TRUE DISCOVERER OF VACCINATION.*

Benjamin Jesty was probably the first person in Europe to vaccinate with bovine virus for prophylactic purposes. He was born at Yetminster, in Dorsetshire, England, and was a farmer who moved to the farm of Downshay, near Swanage, in the same county. He appears to have been an eccentric man, full of quaint actions and speech, but with good power of observation and of sensible reflection on what he had observed. In 1774 smallpox was prevalent in his locality. He was thought to be in no danger of it himself, as he had already acquired cowpox, which he had contracted accidentally from the cows. Some of his family were not so protected, and the fact that two of his maidservants, who had previously had the disorder from the cows, attended patients suffering from smallpox without infection, seems to have determined Jesty to inoculate the cow-pox into his own family as a preventive of smallpox. Accordingly (22 years before Jenner vaccinated the Phipps boy), Jesty carried out his ideas and inoculated his wife and two sons, aged 2 and 3 years, with the cow-pox. The patients went into the fields and the virus was taken on the spot from the teats of the cows. A stocking-needle was the instrument used. The sons had the disorder in a favorable way, but in the course of a week Mrs. Jesty's arm was much inflamed. She had fever, and was so ill that a neighboring surgeon, Mr. Trowbridge, of Cerne, was called. He said: "You have done a bold thing, but I will get you through it if I can." She soon recovered perfectly. Fifteen years later, in 1789, the sons were inoculated for the smallpox by Mr. Trowbridge along with others who had not had the cow-pox. The arms of the Jestys inflamed, but the inflammation soon subsided, and no fever or other variolous symptoms were observed, while the unprotected individuals went through the usual course of inoculated smallpox. Subsequently, Mrs. Jesty and her sons were often exposed to smallpox without taking it, while in 1805 one of the sons was again inoculated with a negative result. In 1805 the Jennerian society persuaded Jesty to come to London for five days for the purpose "of taking your portrait as the earliest inoculater for cow-pox, at the expense of the institution; you will receive fifteen guineas for your expenses." He came, and his portrait was duly taken. He died April 16, at the age of 79, and he is buried in the little village churchyard at Worth Maltravers.

*From an article on "Medical Discoveries," by Dr. George M. Gould, (*Jrnl. A. Med.*) May 30, '03.

—Three cases of remarkable laughter, in regard to its onset as well as duration, are reported to have occurred in Wellington, Ill. The first case was that of a girl, 15 years of age, who laughed four days in succession. The spell was cut short by the effect of a glass of cold water being thrown into the girl's face by her father. The second case was that of a girl, 15 years of age, and the third that of a young man. In these two cases the victims stopped laughing, probably from sheer exhaustion, after a week's duration of the disease.

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Good manners are made up of petty sacrifices. Temperance, courage, love are made up of the same jewels. —*Emerson.*

NEW DISCOVERY IN THE MICROSCOPE.

A FULL description of a most important discovery in the adaptation of the microscope to minute investigation has been made by H. Siedentopf and R. Zsigmondy, two Professors of Jena University and published in a recent number of the German scientific journal *Annalen der Physik*. The discovery consists in a new method of microscopic observation whereby ultra microscopic particles are not only made visible , but can also be studied with a view of determining their size,and may have far reaching results in the field of scientific investigation and do much towards the further solution of a problem of the molecular construction of matter. This method consists in a powerful artificial illumination of the particles to be observed. These particles, because of their minuteness, exert no material influence upon the vibratory period of the light waves, and hence appear to the observer as self-illuminating, or luminous objects by virtue of their reflected light. Since, however, the reflected light is weaker than the original illuminating beam it is necessary in order to secure the advantages of an intensified illumination of the particles, to employ the principle of dark field illumination.

Heretofore, the great imperfection in the method of dark field illumination has been the failure to eliminate all light reflected from the surfaces of the condensing lens and the microscopic objective. Whenever any of the light of the stronger illuminatory ray mingles with the weaker light reflected from the particle which is being observed, the visibility of that particle is proportionately blurred just as the light of the rising sun gradually obscures the morning moon. Perfection in dark field illumination has been attained when none of the light of the illuminatory ray enters the line division in the observation of an object through the microscopic objective, and the object is visible solely by virtue of its own reflected light. This interference of the direct light of the illuminatory ray or of its reflected light from the surfaces of the condensing lens, with the reflected light with the object under observation, is overcome through the application of the principle that when the illuminatory ray is perpendicular to the axis of the microscopic objective, any direct light or any light reflected from the surfaces of the condensing lens can no longer enter the line of vision of the observer, and hence can no longer interfere with the reflected light of the particle to be observed; provided that the condensing lens for the illumination of the object and the microscopic objective for its observation are so adjusted as to meet at a common focus. This method of dark field illumination enables the employment of the most powerful sources of illumination for microscopic observation.

The principle involved in this new method is well illustrated by the common phenomena of the visible sunbeam in a darkened room which is penetrated by a ray of light. Dust particles in the path of the ray become visible when the eye of the observer is at right angles to the direction of the penetrating ray. If now, the illumination is strengthened through the employment of a more powerful source of light and a condensing lens, and the power of the eye is strengthened by means of a microscopic objective, we have all the essentials of the new method of dark field illumination. Through this discovery the Jena professors have seemingly accomplished what the great Helmholz did not conceive as possible. This physicist declared the limit of microscopic perception to be0.0001 millimeter (1 millimeter=0.03937 inches), while it is estimated that this limit has been extended from 0.000004 to 0.000007 millimeter. In the line of investigation since the discovery of radium and the divisibility of the atom, this new improvement of the microscope is of the utmost importance in scientific research, and we may look for results which will give us additional light upon the nature and structure of matter. In this connection it may not be amiss to state that from information received from a scientific source in Washington a discovery has been made by an astromomer connected with one of the observatories in California in the construction of the telescope which increases its power far beyond anything which has ever been attained. This is accomplished not by increasing the size of the lens, but by a series of smaller lenses reflecting one upon another. It has been claimed that with the telescope constructed on the plan of this new discovery the condition of Mars, and especially the moon, have been found to be entirely different from what has been supposed. The moon being revealed not as a dead planet, but containing vegetable and probably animal life. These statements which, it is said, have been confirmed by other astronomers will, of course, require still further observation before being adopted by the scientific world.

TECHNICAL SCHOOLS.

THE $250,000,000 annually produced by the chemical industries of Germany are the direct result of the Government expenditures on national scientific schools. The University of Lon-

don in its new annex now in process of construction, influenced by the success of the German institutions, will equip a technical scientific school similar to Berlin's Charlottenburg's Institute, where, owing to scholarships and low fees, relatively poor men will find opportunities to prove their quality. It is intended that the new school shall open its doors to the best brains in the country and to the conversion of general scientific knowledge into practical value. Express attention will be given to original research and such studies as chemical technology, mining and meteorology, railway and marine engineering and electric traction.

The technical and scientific schools in this country in which almost every science and every industry are practically taught are mostly the outgrowth of individual bequests, and their practical workings are seen in every avenue of national and individual progress. We may instance among the great scientific schools of this country Lehigh University, founded by Asa Packer, whose students receive the practical instruction in the mines under his control which has given to the world some of its ablest and most efficient mining engineers. The agricultural department of Cornell University, an institution founded by Ezra Cornell, has in scientific investigation and practical instruction in agriculture added millions to the wealth of the country. The practical teaching obtained in the technical schools, founded and endowed by private munificents has placed this country in mechanical invention, especially in machinery adapted to agriculture and the development of power, foremost in the world. In the wide range of science in the improvement of the telescope and in all the various uses of electricity, America leads the world, and stands second only to Germany in the intricate and delicate workings of chemistry. In the face of the great socialistic problem, in its antagonism against great wealth being centered in few individuals, we can point to these institutions as a proof of the good accomplished by private beneficents, which could have been obtained in no other way.

IS ARSENIC A PHYSIOLOGICAL ELEMENT.

THE presence of arsenic in the human system as has recently been discovered by M. A. Gautier of Paris, and afterward confirmed by Monsieur Bertrand, and the fact that it has been found in all animals from the higher vertibrate down to the sponges leads these distinguished scientists to the conclusion that it is a primordial element of the living cell absolutely necessary to the proper working of the organism. In a recent scientific cruise made on board the Prince of Monaco's yacht, Monsieur Bertrand found by infallible tests of great delicacy the presence of arsenic in animals inhabiting the bottom of the sea,where there could have been no possibility of their having obtained it as a part of their development. Monsieur Bertrand has just brought to the attention of the Academy of Paris the presence of arsenic in hens' eggs. Although every part of the egg contains an appreciable quantity, the largest proportion is found in the yolk; of the 200th part of a millegram found on an average in an egg, from one-half to two-thirds is in the yolk, the white containing a much less amount in proportion. The fact of the universal presence of arsenic in animal life, even though exceedingly minute, is of great importance, not only in therapeutics in preserving the harmony of the organic elements of the system, but in forensic medicine, as it may be cumulative,and permits the argument that an isolated trace of it in human viscera may have a perfectly normal origin and does not necessarily admit of a criminal intent.

SERUM OF MILK.

MONSIEUR BLONDEL of Paris read before the Medical Congress of Madrid an exceedingly interesting article on the physiological and therapeutic properties of a serum made from milk. The results of Monsieur Blondel's conclusions were reached through numerous cases in diverse infectious diseases mostly taken from among the severe ones, in which the proportion of cures obtained showed the great value of the remedy. Under its influence the appetite became sharper, and the general condition was much improved. There was a notable increase of urea, uric acid and phosphates in the urine. As the serum has a marked action on the nutrition by hastening the process of the oxidation and disassimilation it is particularly indicated against gout. Administered the day following the attack of this disease it caused a new crisis within twenty-four hours with an enormous discharge of uric acid. The immediate effect of the subcutaneous injection of milk serum is the lessening of the pressure of the blood; on this account Monsieur Blondel found it specially indicated in sufferers from arteriosclerosis, whose stiff, friable bloodvessels threatened rupture. Its application should be progressive to avoid syncope. In 30 patients in the Hospital de'Pitie, the serum administered to subjects suffering from various infections and with temperatures varying from 39° to 41° Cent. produced a lowering temperature which never failed. In pneumonia, typhoid fever and puerperal fever there was a marked lowering of temperature.

The serum is obtained by the rapid coagulation of milk at 38° Cent. by means of an acid, neutralization by soda, and filtering by the Chamberland Porcelaine Bougie.

—The degree of LL.D. has been conferred on Dr. George M. Edebohls, of this city, by St. Johns' College, Fordham, in recognition of distinguished service to medical science. The honor is richly deserved, as no surgeon in this city or in the world stands higher for original and always skillful work than Dr. Edebohls.

UNFERMENTED GRAPE-JUICE.

THE value of the grape for its nutrient qualities eaten fresh from the vines was understood long before its juice was fermented in the production of wine and brandy. What was called the grape cure was for a long time and is to a certain extent at the present day, popular in Europe in the treatment of pulmonary and wasting consumption. An abundance of this food with life in the open air and mountain climbing or daily walks of several miles, more or less, is often most effectual in building up a broken constitution and restoring the waste of tissue and loss of vitality produced by consumption. The composition of grape juice so closely resembles milk that it is sometimes called vegetable milk. It contains less water than milk, but more carbo-hydrates, largely present in the form of sugar, and less protein and fat and a small amount of tartaric and malic acid. With its delicious flavor it is agreeable to the stomach, increases the appetite and is at the same time food and drink, refreshment and nourishment, all in one. Laboratory and clinical investigations have shown the value of unfermented grape juice in destroying the vitality and diminishing the development of typhoid bacilli, and that in other cases impaired digestion is improved, intestinal fermentation diminished, and bodily weight increased.

Within the past few years the value of unfermented grape juice has grown so rapidly in public estimation as a nutritious and agreeable beverage, acceptable alike in the sick room and at the table, that it has become an extensive article of commerce. There is no fruit so easily grown as the grape and almost every cottage in the country has its vines, with clusters of fruit in such abundance that often much of it decays on the vines. It is very easy to utilize it all by putting the juice in bottles and preventing fermentation. In this way it will keep for a long time as fresh as when pressed from the grapes.

Grapes when ripe have the invisible spores of various fungi, yeasts (ferments) and bacteria adhering to their skins. These organisms if left to themselves rapidly increase until the juice ferments. This fermentation commonly called the elliptic yeast, changes the sugar in the grape to alcohol and carbonic acid gas and is the leading factor in converting must into wine, and can only be prevented by destroying the yeast fungi and bacteria by heat. It has been found this can be accomplished and the grape juice thoroughly sterilized without change of flavor at a temperature of from 165° to 176 F., but the temperature should not be carried above 200°, or the flavor may be injured. The principle involved is the same as in canning fruit, but as much depends upon the detail we quote from the *Farmer's Bulletin* No. 176, United States Department of Agriculture; the process is given by the Superintendent: Use only clean, sound well ripened but not over-ripe grapes. The grapes may be crushed and pressed in a portable cider or wine mill or by hand. These can be put in a cleanly washed cloth sack and hung up, or the sack can be twisted by hand until the juice is expressed. The juice should be gradually heated in a double boiler or a large stone jar in a pan of hot water, so that it does not come in direct contact with the fire, at a temperature of 180 to 200 degrees. If there is no thermometer at hand, heat the juice until it steams, but do not allow it to boil. Put it in a glass or enameled vessel to settle for 24 hours; carefully drain the juice from the sediment and run it through several thicknesses of clean flannel, or a conic filter made from woolen cloth or felt may be used. This filter is fixed to a hoop which can be suspended whenever necessary. Fill into perfectly clean bottles(leaving a little space at the top for the liquid to expand when heated. Fit a thin board over the bottom of an ordinary wash boiler, set the filled bottles (ordinary glass fruit jars are just as good) in it, fill with water around the bottles to within about an inch of the tops and gradually heat until it is about to simmer. Then take the bottles out and cork or seal immediately. Grape juice prepared in this way will keep perfectly fresh for an indefinite length of time, and will always be ready for immediate use.

THE REWARDS OF PRACTICE.

THERE have just been graduated in medicine in this country some five thousand men and a few women. Many, we wish we might say all, of these will engage in hospital work for a year or more and what we have to say here, is addressed more particularly to those of this year's, or earlier classes, who are just about to engage in private practice.

All of you know—but we doubt whether you realize—that you are entering a life work in which competition is keen and the reward of labor small in everything but the satisfaction of a duty well performed. It may not be out of order to present to you a few plain facts. The average output of the medical schools of the country is at present almost exactly sufficient to supply the losses of the medical profession by deaths and to furnish a pro rata increase of the profession as compared to the increase of population by birth and immigration. If it were not for the fact that the financially responsible portion of population is gradually diminishing while the proletariat is increasing, and that, at least among the former, labor cases, accidents, typhoid fever, malaria, etc., are very markedly declining in numbers, you and we who are already in practice, would have the same prospects to-day that members of the American medical profession have had for, say, the last ten years. Each of you very properly hopes to be something more than an average doctor; do not let this ambition lapse. Yet, collectively, you cannot surpass this average. In other words, you are each to be supported by about 650 persons or 130 families, rich and poor, honest and dishonest, sick and well. At the beginning you will grow cynical as to the very considerable proportion of humanity that has another physician, that is never sick, or that cannot

or will not pay for medical services. Gradually, matters will improve and what we have further to say as to your expectations, applies to the average for a lifetime, not to the first few years. It is quite unanimously agreed that the average practice yields a net income, that is, beyond "business expenses," of about a thousand dollars a year. Successful country physicians have informed us that their gross income is about ten dollars a day; that is to say, fees are so nearly fixed and average distances are such that it is beyond human endurance to attend to more work than is represented by this sum. Of course, there are days when much more is made and other days when more work could be disposed of but practice cannot be regulated so as to accommodate the physician's time and the clientele is pretty closely limited to a number which, in times of prevailing sickness, will represent the maximum accomplishment of the physician while, conversely, in favorable conditions, there will be so little sickness among this clientele, that the doctor will have opportunity for rest and an occasional vacation. A country practitioner, earning an average of ten dollars a day, must keep at least two teams of horses and must provide for the usual office expenses, including help. It is doubtful if the net income will, then, exceed two thousand a year, out of which strictly personal and family expenses are to be met.

In the city, the routine fees are about 50 per cent. higher and the shorter distances and better facilities for transit render it possible for the general practitioner to earn twenty or twenty-five dollars a day, but his expenses will be at least double those of the country practitioner, so that, in the long run, the actual purchasing power of his income is about the same as for the country. It is, therefore, largely a matter of personal choice of mode of life, whether we decide that the country or the city practitioner is better off. It must be remembered also that this estimate of ten and twenty or twenty-five dollars a day does not represent the average amount of practice which is available, but all which a man of great endurance, perfect health, and a high degree of personal magnetism may ever hope to achieve, unless he has unusual professional ability and opportunity, as well as business acumen and executive skill. For one general practitioner in what may be termed "full practice," there are probably a dozen or twenty who have the time, application and professional ability for such an amount of work but who lack the subtle power of attracting it.

The expert, who can command high fees, whether he be technically known as a specialist or otherwise, is, in the great majority of instances, a man well along in years, who has shown unusual industry and ability. To an even greater degree than the general practitioner he must spend time in reading, laboratory work, in attending charity cases, and in devoting himself to society meetings and other matters which are not directly remunerative. There never comes a time when an expert can feel that he can rest upon his laurels and make all of his working hours directly remunerative—or if he ever deludes himself that such a time has arrived, it is only the beginning of his decadence. Extrinsic social and financial aids are of even greater advantage in medicine than in most other occupations, unless they are made the excuse for idleness or snobbishness. Honest toil is, however, the root of success in medicine, although the "grafter" may attain some mediocre degree of purely financial success, while, as in all other avocations, extrinsic attractions may counterbalance a lack of genuine ability and just as one man may get better results with a poorly constructed tool than another can achieve with the most perfect, so an inferior intellect may be better directed than one of the highest grade. A gross income of $100,000 a year may be regarded as practically the maximum possible in medical practice, under the most auspicious circumstances, including the highest degree of professional and business ability, social prestige, personal influence, and a powerful backing from the very commencement of medical studies. It is extremely doubtful whether more than a dozen of the 120,000 American physicians and surgeons have incomes of $50,000 and over, while, in a miscellaneous series of a thousand, only two or three earn more than twenty thousand a year, and not more than two in a hundred earn ten thousand or over. Even five thousand a year is attained only by one man in about twenty. It must be remembered, also, that the larger incomes represent relatively enormous expenses, and the hardest kind of work and that they are enjoyed only for a few years in a lifetime.

We have dwelt somewhat at length upon the financial side of medical practice, partly because this is a convenient though somewhat crude way of estimating human achievement and happiness but largely to emphasize the fact that, however able, conscientious and adapted to his vocation, a physician may be, he should seek the law or some business pursuit, if he is conscious of possessing the kind of executive power which facilitates money getting and if he is disposed to estimate his success in life in financial terms. It is important to remember that, unlike certain phases of law and most phases of business, medicine is mainly a matter of individual effort. The physician can, it is true, employ ordinary servants, and such strictly business assistants, as a stenographer, nurse, and laboratory worker. If unusually successful, he may even have a salaried assistant or partner who can hold certain portions of his clientele for him, but his real work must be done personally. On the other hand, a large business is bound to yield a large income, if rightly managed, simply because clerks, superintendents and laborers can be secured at, say 10 per cent. less than the true value of their services and it is axiomatic that, provided the business reaches certain proportions, it is a success.

It is difficult to say just wherein lies the real recompense for medical practice. Except for the man of mediocre financial ability, as the one who ought to conduct a street car or work behind a counter or at a desk but who has somehow managed to get a medical diploma, it certainly does not lie in the money earned. The surgeons, gynaecologists and physicians whom one might point to as having made a really great financial success of medicine, we can, for the most part, readily imagine enjoying just as fully the pleasures of riches, as bishops, publishers, dry goods merchants, or military, naval or civil officials of high rank. Many, indeed, would have equally as high a financial rating if they had simply invested their patrimony in ordinary channels which require little direct attention.

Neither is the reward of the physician that of personal popularity or affection, as so many writers of fiction have set forth. It is a matter of common gossip that in club elections, appointments to posi-

tions of trust and politics, a doctor stands a poorer chance of selection than a member of the bar or a business man. It is also relatively rare for a doctor to receive a gift, bequest or similar token of esteem, as compared with a teacher, minister, or prominent man, and, even for the charity which he dispenses, it is difficult for him to secure funds to cover indirect expenses. We have been surprised, in the case of family physicians of supposed popularity and long service, to note how few patients have really felt such a personal regard as is commonly directed toward a teacher, clergyman or other adviser.

We are inclined to believe that the real charm of medical practice is subjective rather than objective. In common with every other lifework, there is the satisfaction of conscientiously fulfilling a duty and, in many instances, the gratification of having succeeded according to the limitations of the profession and of the particular circumstances in which one is placed. The particular charm of medicine is closely allied to that of science or pedagogy, or some form of literar work. This is true whether the branch of medicine followed involves laboratory study, writing or teaching, or not, for even when pursued in the crudest clinical way, the pleasure of medicine is essentially that of a study. Moreover, to this pleasure, is added the feeling of having accomplished some practical work which is lacking from purely scientific, pedagogic and literary vocations.

CLASSIFICATION OF DISEASES.

THE United States Census Office issued in 1902 a Manual of International Classification of Causes of Death, supplemented, to some degree, by the terms in use in this country and not included in the revised list adopted at Paris in 1900. This list is an exceedingly valuable compilation and, at the same time, a sad commentary upon professional ignorance, not only in the sense that individual practitioners of medicine show, in many instances, a gross unfamiliarity with the nature of disease but also in demonstrating that, as a profession, we are still far from an adequate conception of what disease is.

To attempt a general criticism of the system of nomenclature adopted, we would say that it is absolutely impossible to make a list of diseases. Fifty years ago, such an attempt might have been viewed as attainable. A disease, at that time, meant a group of symptoms, sufficiently conspicuous to warrant a name and, with this conception, it would be theoretically possible to collect diseases as one might collect botanic specimens. We have already reached a stage at which we realize that we cannot tabulate diseases in the form of a list of co-ordinate terms. We must, at least, use a right-angled method and, preferably, one in which three or more lines of classification cross.

In attempting to use a census report as a basis of statistic study we are usually balked by the fact that the classification is partly according to ultimate cause —as measles or traumatism—partly according to region affected—as bronchitis—partly according to symptoms—as apoplexy. A satisfctory tabulation should state (1) the ultimate cause, whenever this is important and recognizable, which is always the case so far as parasitic diseases are concerned; (2) the anatomic part invaded, and (3) the general pathologic condition present. Sometimes, as in measles and scarlet fever, mention or implication of the first item is sufficient, as the disease has a pretty definite seat and pathology and, in such instances, the average or even the poorly qualified practitioner may be relied upon to diagnose the condition with sufficient accuracy for general statistic purposes. Again, as in tuberculosis, the site and morbid anatomy of the disease must be known to render the information of any value. Diseases of very different nature may be confused, (1) because different bacteria imitate one another's effects—as the confusion of the various forms of arthritis or meningitis; (2) because a specific bacterial disease and one due to non-parasitic inflammatory conditions, may locate so as to be mistaken for one another—as in the case of tubercular and non-tubercular bronchitis, diphtheria and croup, pneumococcic and "elevator" pneumonia involving an entire lobe; (3) because of differences in the use of terms or actual, gross diagnostic errors.

Such a criticism by no means reflects upon the compilers, who are forced to make the best of very imperfect returns. We may suggest, however, for practical purposes, a separation of statistics according as a sharp distinction of diseases may be relied upon with a reasonable probability and as reports are obviously confused. Even a few thousand returns in which the diagnoses bear the stamp of authenticity, would have great value, if collated separately.

ETHER OR CHLOROFORM?

SOME time ago it was said in jest to a surgical friend that he would never become a great man, because he did not use chloroform. Seriously, is it not worth while for our leading surgeons, so many of whom use chloroform as a matter of routine, to heed the repeated warnings of statistics? The belief that ether is a safer anaesthetic than chloroform, has prevailed for a long time, yet a considerable proportion of surgeons of eminence and large institutions persist in using chloroform, by preference. On the other hand, we believe that there is no question that the occasional operator. usually employs ether. Thus, if skill and attention to detail were the main factors in regard to relative safety, modern statistics ought to show a reversal of the earlier impression that ether is safer than chloroform. But the combined statistics of Gurti of Berlin and Juillard of Geneva, aggregating nearly 700,000 administrations of chloroform and nearly half as many of ether, show a death rate from the former of 1:3082 and from the latter of 1:14828. These statistics, it is true, extend backward for a number of years, but the report of the British committee within the last two years, still shows that ether is far safer than chloroform—ether mortality 0.065 per cent, chloroform 0.582 per cent. —the difference being even higher than the old statistics indicate.

Such statistics relate solely to immediate mortality. It is commonly believed that the more remote effects on the lungs and kidneys are much worse for ether than for chloroform. In regard to the former action, it is difficult to depend upon statistics, as chloroform is used in preference to ether in many cases in which pneumonia is feared and it is practically impossible

to distinguish between cases in which this fear is justified and those in which it is not. Then, too, many patients undoubtedly contract pneumonia from infection or exposure to damp and chilling at the time of administering the anaesthetic. In some instances we may believe that the inhaler is contaminated or that the patient is exposed in thin clothing is doused with antiseptic solutions, or comes in contact with metallic and glass surfaces on the operating table, all through gross carelessness. At other times, such exposures are purely accidental, perhaps unavoidable, but in either instance, the pneumonia, whether infectious or catarrhal, has nothing to do with the anaesthesia. Mouth breathing, so frequent during anaesthesia, unquestionably has considerable bearing on the development of pneumonia, whatever anaesthetic is employed. The statistics of the Presbyterian Hospital of New York, 1887-97, are as follows:

Ether	4914
Cases of pneumonia	17
Deaths from pneumonia	8
Chloroform	689
Cases of pneumonia	8
Deaths from pneumonia	7
Ether and chloroform	116
Cases of pneumonia	2
Death from pneumonia	2

Thus, the risk of pneumonia is apparently about 2 1-2 times as great from chloroform as from ether and the fatality over four times as great. But, as has been said, the chloroform series were perhaps, more liable to develop pneumonia.

We have been unable to find any carefully studied and large series of cases, showing the action of anaesthetics upon the kidneys. In most cases, the examinations of the urine have been of the simplest nature and have consisted merely of tests for albumin. Moreover, the results are so varied that we must conclude that reagents of different delicacy were employed or that the personal equation is largely involved. Of etherization series, in which the kidneys were supposedly normal before anaesthesia, as determined by simple qualitative tests of urine, the following may be mentioned: Weir found temporary albuminuria in 31 of 305 cases. Fenter, experimenting on dogs, whose kidneys are supposed to be more sensitive to toxic irritation than those of men, obtained negative results. Butler found albuminuria once in 500 cases, Körte six times in 600. Hall found albuminuria 33 times in 110 sections, 10 having partial or complete suppression and 2 dying in coma. F. F. Simpson found casts after operation in 175 of 642 cases. Patein, out of 70 administrations of chloroform, found albuminuria pre-existing in 12 per cent, 3 per cent. (2 cases) additional developed during anaesthesia but before operation and, after operation, 73 per cent. were involved. This seems to show a vastly higher degree of irritation of the kidneys than is ascribable to ether, but much larger statistics and, in particular, more careful study is needed. It is, however, difficult to see why etherization should affect the kidneys more seriously than a single alcoholic spree, as alcohol and ether differ only as being the oxid and the hydrate respectively of ethyl.

We do not care to discuss the less frequently employed general anaesthetics, though Lotheisen reports one death, in three minutes, after the administration of ethyl chlorid in about 2500 administrations. Nitrous oxid anaesthesia or mixed anaesthesia with elaborate apparatus is liable to produce asphyxiation if not expertly managed, or if a valve gets out of order. So, too, the administration of the A. C. E. and similar mixtures, is somewhat dangerous on account of the variable evaporation of the constituents. On the whole, it seems best to adhere to ether unless some urgent contraindication exists.

A SIGN OF THE TIMES.

The mourning for the death of Pope Leo XIII. and the sympathy expressed by the whole civilized world, Protestant as well as Catholic, affords a striking illustration of the increased tolerance of opinion and the respect for earnest work in the service of humanity, not only in the religious world, but everywhere, along the great avenues of thought and progress. The contrast is so marked between the present time and fifty years ago as to call for special comment. Pope Leo was an eminent illustration of the all round progress so striking in the latter part of the nineteenth century in which he was in thorough sympathy, encouraging and helping it forward. In point of intellect, in its strength, refinement and foresight, he had no superior in Church or State. His sympathies were as broad as humanity. The key note of his nature was love, peace and good-will, and his influence was felt for good in the councils of statesmen, among the high and the low, the rich and the poor, always contributing to harmony and a pure and higher life. With a broad spirit of Christianity he was tolerant of all Christian beliefs. Thank God the spirit of tolerance for which the Pope was so conspicuous an example in religion, is becoming more and more manifest in all professions, working for the same ends, the world's higher development and the good of humanity.

SPIDER BITE.

A gentleman reports that his foot was bitten in three different places by a small black spider. He did not notice it the next morning, but it began to hurt about noon and swelled rapidly, extending above the ankle, involving the whole foot, so that it was very painful to stand. The next morning it looked badly and was dark purple in color. He used antiphlogistine liberally, which gradually reduced the pain, soreness, coloring, and in a few days he was able to use his toes and ankle joint, but owing to the size of the foot had to wear a slipper for ten days. The antiphlogistine did not seem to have much effect on the swelling, and although his foot had resumed its natural color and he could walk on it without much difficulty, the swelling remained about the same until he received three of four mosquito bites on the swollen part and in a few hours afterwards, the swelling had entirely disappeared. It looks as if the two poisons had neutralized each other to some extent.

BIBLIOGRAPHICAL.

GYNECOLOGY—A text book for students and a guide for practitioners. By Wm. R. Pryor, M. D., Professor of Gynecology in the New York Polyclinic Medical School. 163 illustrations in the text. New York and London: D. Appleton & Co. Bound in Cloth, $3.50.

The work is divided into two parts; in the first the diseases are described, and in the latter the operations are given. This is an excellent arrangement, as it enables the surgeons to find immediately what he wishes, without going over unnecessary matter. The volume is profusely illustrated with many original drawings made under the direct supervision of the author at the New York Polyclinic College and Hospital. Dr. Pryor's large experience as a surgeon and teacher and his lucid manner of presenting his subjects will make his work very acceptable, not only to the specialist, but to the general practitioner.

A SYSTEM OF PHYSIOLOGIC THERAPEUTICS, a practical exposition of the methods other than drug giving useful in the prevention of disease and in the treatment of the sick. Edited by Solomon Solis Cohen, A. M., M. D. Vol 6. DIETOTHERAPY and FOOD IN HEALTH. By Nathan S. Davis, Jr., A. M., M. D. Philadelphia. P. Blackiston's Sons & Co. 1902.

The system of Physiologic therapeutics now going through the press under the editorship of Dr. Cohen will be completed in 11 octavo volumes by American, German, English and French authors. In the present volume the diet best suited in individual diseases has been described fully under the heading of each ailment. In this connection the chemical and physiological data concerning the nutritive and other qualities of various other kinds of food has been reviewed, with their relations to the digestive organs and to the organism as a whole. Special attention has been directed to the numerous studies of food and diet prosecuted under the auspices of the United States Department of Agriculture under the supervision of Professor Atwater and also to the valuable analytic studies to be found in the recently published treatise of Hutchinson on "Food and the Principles of Dietetics." This volume is one of the best of the series and will be found of special interest to the general reader as well as to the physician.

A THESAURUS OF MEDICAL WORDS AND PHRASES. By Wilfred M. Barton, M. D., Assistant to Professor of Materia Medica and Therapeutics, and Lecturer on Pharmacy, Georgetown University, Washington, D. C.; and Walter A. Wells, M. D., Demonstrator of Laryngology and Rhinology, Georgetown University, Washington, D. C. Handsome octavo of 534 pages. Philadelphia, New York, London; W. B. Saunders & Company, 1903. Flexible Leather, $2.50 net; with thumb index, $3.00 net.

This work is the only medical thesaurus ever published. It performs for medical literature the same services which Roget's work has done for literature in general. Instead of applying the meaning to different words, when the meaning or idea is in the mind, it endeavors to apply the fitting term or phrase to express that idea. The work will be found of especial value to those who are called upon to explain any subject in the technical language of medicine.

INTERNATIONAL CLINICS. Vol. 2nd. 13th series. 1903. Philadelphia. J. B. Lippincott Co.

These volumes issued quarterly have become a necessity to those in the medical profession who wish to keep in touch with the great thinkers and leading scientists of the age. Volume second is unusually rich in practical articles and includes under the head of Summer Diarrhea of Children, Milk Bacteria and Intestinal Disorders, The Causation, Nature and Prevention and the Symptomatology of the Summer Diarrhœa of Children and the Dietetic and General Treatment of Children and also of Cholera Infantum. The articles on Diseases of the Pancreas Medicine and General Treatment, Surgery Pediatrics, Obstetrics, Gynecology and Ophthalmology have all been prepared with great care by some of our ablest writers and are fully illustrated where necessary to give additional clearness to the text.

SURGICAL DISEASES OF THE ABDOMEN with special reference to diagnosis. By Richard Douglas, M. D.

We cannot do better than to present the idea of the author in the preparation of his work in his own language, clearly expressed in the commencement of his preface—"As a teacher and practical worker in the special field of abdominal surgery for eighteen years, I have found it necessary to rely largely upon journal literature for guidance. Reliable sources of information have not always been available, and on this account much of my work has been done in a manner to me unsatisfactory. I therefore undertook a systematic study of those conditions within the abdomen which require surgical relief, relying upon my clinical experience to aid me in the choice and method of consideration of subjects and the selection from general literature of the material which has proved to me of greatest value. The facts here presented are only such as have seemed to me of practical usefulness and as have borne the test of application.

"My effort has been to elucidate the difficulties of diagnosis by a more thorough study of the causes and nature of these conditions, and make possible a preparatory knowledge which not only is essential to perfection in operative technique, but which will deter the conscientious operator from undertaking tasks beyond his skill."

We should expect from the high standing of the author a work of rare excellence, in diagnosis, in general treatment, and in the technique of operations, and are not disappointed. The work from the advanced standpoint of abdominal surgery is one of the best ever published.

FIRST PRINCIPLES OF OTOLOGY. A text-book for medical students. By Albert H. Buck, M. D., Clinical Professor of the Diseases of the Ear, College of Physicians and Surgeons, New York; Consulting Aural Surgeon, New York Eye & Ear Infirmary and the Presbyterian Hospital. Second Edition. $1.50 net. New York. Wm. Wood & Co. 1903. Pp. 216. 12mo.

The larger treatises on otology, including Dr. Buck's well-known text-book on diseases of the ear, contain a great deal of material which, however useful it may be to men who propose to make a specialty of diseases of the ear, is of less value to medical students and general practitioners of medicine, of whom a knowledge of only the first principles of this branch of surgery is required.

The present little book is the outcome of an attempt to supply such a manual for the use of undergraduate medical students. The original edition published several years ago for the exclusive use of the author's pupils has proven so popular with them that it was decided to publish the revised edition for general distribution. The present edition has been revised, and to some extent rearranged. The book will be found to answer its purpose admirably.

A Text-Book of Modern Materia Medica and Therapeutics. By A. A. Stevens, A. M., M. D., Lecturer on Physical Diagnosis in the University of Pennsylvania; Physician to the Episcopal and St. Agnes Hospitals, Philadelphia. *Third Edition, greatly enlarged, rewritten and reset.* Handsome octavo of 663 pages. W. B. Saunders & Company. 1903. Cloth, $3.50 net.

Since the appearance of the last edition of this book such rapid advances have been made in materia medica, therapeutics, and the allied sciences, that the author has wisely rewritten the entire work. He has altered the general plan of the book considerably, and instead of considering the drugs in alphabetical order, as in the previous editions, he has classified them according to their pharmacologic action. This arrangement, notwithstanding the present unsettled state of pharmacology, possesses certain advantages in that it aids the student to correlate established facts, and to apply them more readily to the treatment of disease.

The part devoted to Therapeutics has evidently undergone a thorough revision; and we note that all the newer remedies which have been shown by competent observers to possess real merit and to be worthy of a more extended trial at the hands of the profession, have been considered. Indeed, the work is in every particular thorough and accurate, and its title, Modern Materia Medica and Therapeutics, is fully justified. We heartily commend the work to students and practitioners.

The Practical Application of the Rontgen Rays in Therapeutics and Diagnosis. By William Allen Pusey, A. M., M. D., Professor of Dermatology in the University of Illinois; and Eugene W. Caldwell, B. S., Director of the Edward N. Gibbs X-Ray Memorial Laboratory of the University and Bellevue Hospital Medical College, New York. Handsome octavo volume of 591 pages, with 180 illustrations, nearly all clinical. W. B. Saunders & Co. 1903. Cloth, $4.50 net; Sheep or Half Morocco, $5.50 net.

It has been the aim of the authors of this work to elucidate fully the practical aspects of the subject. It is evident that all the authentic literature which has developed since Rontgen's wonderful discovery has been carefully digested, this being supplemented by the extensive experience of the authors. The value of the X-rays in diagnosis has been discussed in a thoroughly practical manner, and their limitations in this field indicated. Particular attention has been devoted to the use of the X-rays in therapeutics. Nearly all the illustrations in this section represent actual clinical subjects, and show with unusual fidelity the condition before the use of the X-rays, at various stages of their application, and, finally, the therapeutic results obtained. Full details are also given as to the use and management of the apparatus necessary for X-ray work. All the methods with which the best results have been achieved have been carefully described in a comprehensive way. There are chapters on X-ray Tubes, Induction Coils and Controlling Apparatus, Static Machines, Fluoroscopy, Radiography, Photographic Materials Used in Radiography, etc. This section also fully illustrated with instructive photographs and drawings of the apparatus, including four beautiful full-colored plates of X-ray tubes. In fact, the work will be found of invaluable assistance, not only to the general practitioner, but also to the dermatologist, presenting, as it does, the very latest advances in X-ray therapeutics and diagnosis.

The Autobiography of a Thief. Recorded by Hutchins Hapgood, author of "The Spirit of the Ghetto," &c. Price, $1.25 net; pp. 349. Octavo. Fox, Duffield & Co. New York. 1903.

The author has given in this life-story of a thief an unmistakably interesting, impressive, forceful and truthful statement of facts just as they occured in a human being. It is especially useful to the would-be philanthropist, and it cannot fail to interest the general reader. The explanation of the "insurance graft" and how it is accomplished, will be of service to the medical officers of insurance companies. This new publishing house began its career with an excellent edition of "Every Man," and its second book shows the wisdom with which it is guided.

Hay Fever; Its Prevention and Cure. By Perry Dickie, M. D. Philadelphia. Boericke & Tafel. 1903. Pp. 173., 12 mo.

The author has given us an interesting and instructive little book upon a subject which may be considered trite by some, but when one has a case to treat he will be glad of just such help as he will find here. The little volume contains much practical common sense.

Twenty-Second Annual Report of the State Department of Health of New York for the Year Ending December 31, 1901. In two volumes with maps.

Dr. Daniel Lewis, Commissioner of Health, is to be congratulated upon the character of his report. It is a valuable document for reference.

The annual report of the Lunacy Commission of England and Wales shows an enormous increase of madness in those countries. In 1859 the number of insane was 1 in 536 of the population; in 1893 it was 1 in every 293; showing a gain in less than 50 years of nearly double.

The International Journal of Surgery Company, of 100 William street, New York, have in press and will soon issue *"Nose and Throat Work for the General Practitionar"* by G. L. Richards, M. D. This volume has been prepared more for the general practitioner than for the specialist and will enable him to include in his general work a large class of cases which he has hitherto neglected.

Errata.—On p. 249, third line, of Dr. Sommer's article, read detractors, instead of "detectives," and in forty-fifth line read cervical vertebra, instead of "clinical. On p. 250, line twenty-three, read Nitze, instead of "Leiters."

RETROSPECTIVE THERAPEUTICS.

Light as a Curative Agent.—Extensive experimentation is going on regarding the curative effects of light (*Pacific Med. Journal*). The old-fashioned solarium is again cropping into use. Sunshine and dry atmosphere are extolled in the treatment of tuberculosis, and, lastly, strong light in the laboratory (concentrated rays) is used for the same purpose. The *Lancet,* in a recent number, remarks that in our conscious superiority to our forefathers we have been used to look with contempt on their ways of treating smallpox by means of red light in the form of red blinds, curtains and coverlets, but with our present knowledge of the chemical and physical action of the different rays of the spectrum, and the influence of light and darkness on life's highest and lowest manifestations, we may have felt a suspicion that whatever the theory of the mediæval physicians, their freaks may have had a scientific basis.

In a late number of the *Zeitschrift fuer Krankenpflege* we find that it has been tried, and apparently with remarkable results, in the treatment of measles. A child of eight years old was stricken with measles. On the second day he was brought under the influence of red light. In three hours the rash disappeared, the fever subsided, and the child was apparently well, wanting daylight to play in. The red blinds were removed and daylight admitted to the rooms, but in three hours thereafter the medical man was again summoned,and found the rash and fever had returned, and the child was weak and prostrated. The red light was again resumed, the rash again disappeared in a little over two hours, as did the fever, this time permanently. In two more days the child was well in every respect.

Chloretone in Seasickness.—J. W. Fawcitt, writing to the *Lancet,* March 7, 1903, says he can confirm the good opinion expressed by Wheeler in the *Lancet* of February 28, on the value of chloretone in seasickness. Last June when about to cross the North Sea he was furnished by Parke, Davis & Co. with a supply of the drug in five-grain capsules. He is a bad sailor, and a sea voyage, rough or smooth, has for many years meant at least forty-eight hours of abject misery. On this occasion, before leaving the dock, he took one capsule, and on retiring two additional capsules. During the night and all the next day it blew hard, with a nasty cross-sea, yet he was comfortable and did not miss a meal. The following morning the stewardess, who was very ill, said that all the women passengers were in a similar plight. He gave two capsules to the stewardess and placed the remainder of his stock at the disposal of the ladies. The stewardess said that she was speedily relieved, and could go about her work comfortably, and that every woman to whom the medicine was administered felt better. On the return voyage he very soon became seasick, having neglected to take the remedy in time. Th administration of two capsules made him comfortable, so that he was able to take his place at the table and eat a good luncheon.

Ice for Nausea.—Modern Med. Science says: A physician advances the theory that the distressing sensation of nausea has its seat in the brain and not in the stomach, and that relief may be obtained by cooling the base of the brain. He claims to have tested this often and thoroughly in the cases of sick headache, bilious colic, chorlera morbus and other ills in which the nausea is a distressing symptom without a single failure; also that he once relieved the nausea resulting from cancer of the stomach by the application of ice to the back of the neck and occipital bone. This ice is to be broken and the bits placed between the folds of a towel. Relief may be obtained by holding the head over a sink or tub and pouring a small stream of water on the neck. This is worth remembering as a relief for sick headache.

Enuresis and Silver Nitrate.—Success has attended the instillation of silver nitrate in the urethra by C. Delfosse (*Jour. Sci. Med. de Lille,* Nov. 1, 1902; *Med. News*) in several cases of nocturnal enuresis, which failed to respond to the belladonna treatment. After preliminary lavage, 10 drops of silver nitrate (one in 30) were used; the amount being increased to 15 or 20 drops in those cases in which a second application was necessary. A third treatment was required in but one case.

Hot Salt Solution in the Treatment of Hemorrhoids.—Lotion (*Med. Record,* March 14) advises the use of hot decinormal salt solution injections in the treatment of internal hemorrhoids. He injects the solution as hot as can be borne by the hand, inserting the needle as near the base of the tumor as possible. The needle is thrust to about the middle point. Ten minims of the solution are first injected, the needle pulled out about a sixteenth of an inch, an equal quantity of the solution injected and the balance (to one dram or even two drams) placed just beneath the mucous surface which almost immediately turns a pink-red color, in two minutes becoming blanched. After a few applications the hemorrhoids slough away. The procedure is claimed to be almost painless. The author has employed it in seventeen cases.

An Operation for Paronychia, or "Run-Round."—By Sinclair Tousey, A. M., M. D. (*Medical News,* April 11). It is only in some cases of long standing that it will be found necessary to remove the nail, either in whole or in part. In all fairly recent cases no cutting is required. The author's method of dealing with paronychia follows. The attachment of the cuticle to the dorsal surface of the nail is separated by means of a knife so as to allow the pus to escape. The sulcus is then disinfected by means of a nitrate of silver stick. The advantages of this method of operating over those usually employed are three. (1) The method is absolutely painless. (2) There is not the loss of a single drop of blood. (3) There is no disfigurement from the operation, since there is no cutting.

A Neurasthenic Pulse Phenomenon.—L. Braun and A. Fuchs (*Centralbl. f. Innere Med.,* Dec. 6, 1902) discuss abnormal cardiac rhythm, and the effects of irritation of various kinds upon the rhythm. It has repeatedly been noted that neurasthenics show very marked alterations in the frequency and force of the pulse waves. The authors state that if a neurasthenic person is placed in a horizontal position for some time the heart-action becomes more and more regular, and finally almost entirely so. Even the respiratory variations of the pulse become much less marked. If the patient is then required to make a few rapid movements, the neurasthenic character of the pulse rapidly becomes again manifest. Such an alteration in the pulse is characteristic of neurasthenia. The most striking change in the pulse is that dependent upon respiration. This is far more pronounced in a neurasthenic than in a normal person.

Sterilized Linen for Infants.—A communication from Lyons in *Rev. Mensuelle des Maladies de L'Enfants*, Paris (Jour. A. M. A.) states that during the last few months the diapers and garments used for the infants in the hospitals have been sterilized in the same way as the dressings, etc., for surgery. The outfit for each babe is wrapped in a separate cloth, arranged in order and then sterilized and handled as little as possible. The attendants disinfect their hands as for assisting at an operation before taking up the babe. They find that the extra trouble is more than compensated by the prevention of cutaneous affections and the rapid healing of those observed when the infant is first received. This method of aseptic care of infants has been found to pay in the saving of both time and trouble in the end, besides the advantages for the child.

The Olive Oil Treatment of Gastric Ulcer.—Walko (*Centralbl. f. Inn. Med.*, 1902, No. 45) strongly advocates the use of olive oil in gastric ulcer. The patients are put to bed, are fed per rectum, but are given olive oil by mouth three times daily. The initial dose is a tablespoonful, which, however, if the patient tolerates the oil, is gradually increased to three tablespoonfuls. After swallowing the oil the mouth is rinsed out with some well tasting solution. Where its administration gives rise to much nausea, the oil may be given through the stomach tube. In such case, three to seven ounces are introduced in the form of a thorough emulsion. After the more severe symptoms of ulcer have disappeared, Walko carefully and gradually returns to feeding by the mouth, but for another two weeks also continues the administration of the oil. According to his view, gastric ulcer heals decidedly more quickly under this regime than under any other.

The Negative Side of Milk Sterilization.—Sill (*Med. Record*, December, 1902; *Therap. Gaz.*) says: "It is unnecessary to Pasteurize milk to destroy disease germs when a pure milk is provided for, and this can be practically done by having the herd frequently subjected to the tuberculin test to exclude tuberculous cows. The cows must be groomed, the teats and udders and the milkman's hands thoroughly washed and dried before milking. The milkman should wear clean, washable clothes, and the milking should be done in a building away from the stables.

The milk should be received into sterilized quart bottles, which are then tightly sealed, labeled with the dairyman's name and the date and cooled immediately to a temperature of 40° F.

"Experiments at the Yale University experiment station show that when milk is cooled to 40° F. all bacterial growth is at once arrested, and continues so as long as the milk is kept at that temperature. Milk has been kept in this way for several weeks."

In conclusion the author states that cow's milk is generally acknowledged to be the best substitute for mother's milk, but cow's milk is not bettered by sterilization or Pasteurization; on the contrary, this treatment undoubtedly makes it the direct cause of rickets and scurvy and kindred diseases in children.

Dr. N. P. Daniloff (*Roussky Vratch*, February 15) concludes, after a critical study of this subject, that the disadvantages of sterilizing milk in the artificial feeding of infants lie chiefly in those changes effected in milk by high temperatures. These alterations are not only chemical, but also physical, and are so profound and important that they interfere seriously with the absorption and assimilation of the milk. A prolonged feeding with sterilized milk not only destroys the balance of nitrogenous metabolism, but also interferes with the growth of the body, all the more so because the salts are changed in character by sterilization, and so an insufficient amount of the salts necessary for nutrition is absorbed. Sterilized milk, therefore, induces a defective development of the body and renders it more susceptible to the invasion of diseases, especially to maladies of the blood, the general metabolism and constitutional diseases. These facts, the author believes, should be sufficient to relegate sterilization to the past.

Fischer (*Infant Feeding in Its Relation to Health and Disease*, edition of 1901, p. 102) states as follows:

"Just as the medical profession, and to some extent the laity, have become thoroughly impressed with the idea that milk should be boiled before being used, to insure the destruction of the microbes which it contains, Dr. Freundenriech (*Bacteriological World*) comes forward with a series of experiments by which he claims to prove that fresh raw milk possesses remarkable germicidal properties. According to his experiments, the bacillus of cholera, when put into fresh cow's milk, dies in an hour, the bacillus of typhoid succumbs at the end of twenty-four hours, while other germs die at the end of varying periods.

"Milk which has been exposed to a temperature of 131° F. loses its germicidal properties. Milk which is four or five days old is also devoid of microbe-killing power."

Nearly six years ago, L. Emmett Holt said (*Pediatrics*, Nov., 1897), "The value of milk sterilization consists in improving its keeping qualities, and in the destruction of pathogenic germs; but with milk that is fresh, and as free from bacteria as has been shown to be practically possible, sterilization is unnecessary."

Nutritive Value of Desiccated Vegetables.—It is curious, says *American Medicine*, that the desiccation of culinary vegetables should be so much neglected nowadays in view of the universal use of dried fruits from prehistoric times and the practice of drying such vegetables as the pumpkin, in vogue among New Englanders, in evidence of which the shiny pumpkin poles are still to be seen hanging on hooks in the ceiling in front of the fireplace in many an old homestead. Experiments made in Germany, and more recently in California, have demonstrated that desiccated vegetables suffer no loss of nutriment, and that they remain savory and wholesome. Here is a splendid opportunity for the utilization and conservation of potatoes, beets, parsnips, cabbage and the like at the season of their greatest abundance and in years of over-production, whereby there may be added to the regular supply a line of familiar food concentrated so as to admit of economic transportation for army rations and for those who cannot afford such fresh vegetables out of season. While it may not pay to can such vegetables as we have mentioned, it would be a boon to many if they were put on the market dried.

Mode of Feeding Rachitic Children of Two and a Half Years.—The following regime in the feeding of rachitic children is recommended in the *Archives de Medecine des Enfants*: (1) Feeding at 7 A. M. Bread and milk, gruel, porridge and milk, bread and butter, or an egg with a small piece of fat bacon. (2) Feeding at 11 A. M., cup of milk with a biscuit or bread and butter. (3) Feeding at 1:30 P. M., bread and butter, potatoes, fish or meats, finely divided, pudding and milk,

prunes or marmalade. (4) Feeding at 5 P. M., Milk or cocoa. (5) Feeding to be given a half hour before going to bed. Bread and milk. With this the child must be carefully watched and fruit and vegetables varied accordingly.

Treatment of a Formidable Case of Sprew by Diet; Value of Strawberries.—Dr. E. H. Young reports (*Lancet*, March 28) an excessively severe case of sprew, or chronic diarrhea, occurring in a woman aged 58 years. The disease followed an attack of influenza, and from the onset of the symptoms the patient steadily lost flesh and strength, until she was extremely emaciated. The diarrheal motions were of the typical sprew character—large, pultaceous, ochreous, sour-smelling, frothy and very frequent. She had typical attacks of tetany of the feet, arms and legs, causing her great agony. She at first refused to take a milk diet, but later consented; her condition improved but slightly on it, however. Meat, egg albumen, and bread were added and she improved somewhat. Finally, strawberries were tried, and she was benefited at once. The character of the motions became normal,and the patient made a slow but uninterrupted recovery. The interesting points were: (1) The apparent specificity of strawberries in bringing a cure. (2) The attack of tetany. (3) The change in character of the pulse before the advent of a large fermented stool, it being hard and intermittent. (4) A rise of temperature before an attack of tetany. (5) The failure of a strictly pure milk to cure the condition.

The Absence of Salt as a Cause of Stomatitis.—Dr. J. C. J. Bierns De Hann (*D. Med. Woch.*) Describes an epidemic of ulcerative stomatitis that broke out simultaneously with a great shortage of salt, among the troops in South Africa and those who came in contact with them. There were no constitutional symptoms, and the trouble rapidly subsided when the supply of salt was restored. Mild antiseptics and astringents proved useful therapeutic measures.

Treatment of Obesity by a Milk Diet.—Le Menant (*Jour. de Med.*, Vol. XV., No. 5, p. 51, Feb. 1, 1903) communicated to the Societe de Medecine the results obtained by him in the treatment of two cases of obesity by a reduced milk diet. The treatment consisted simply in directing the patients to take nothing but milk, drinking as little as possible. In five weeks one patient lost 21 pounds, and a second 16 pounds. In fifteen years which have elapsed the writer has treated about thirty cases of obesity by this method, with results highly satisfactory. Commonly the amount of milk ingested each day is one and a half liters, taken in small quantities, ordinarily unboiled and cold, with the exception of the morning, when the milk may be taken hot but without bread. The milk diet is ordinarily continued from four to nine weeks, after which the midday meal is taken, but the milk is continued in place of supper. Every week the patient is weighed after he returns to an ordinary diet, and if there is a marked augmentation in the weight, the milk diet is resumed for a week or more. In this way he gradually reaches a weight at which he remains stationary. The loss in the first week on a milk diet is commonly from two to twelve pounds, in the average case being from four to five pounds. If the loss is abrupt at the beginning of the treatment, the following week it is apt to be less. Upon an average the patients lose about two pounds a week. The treatment is better borne in summer than in winter. Constipation is not an unfrequent complication.

THE CLINIQUE.

Differentiation Between Cases of Mitral Stenosis.—Two interesting cases present themselves to our notice as indicative of a differentiation between mitral stenosis associated with myo-cardiac lesions and a stenosis in which the heart lesion is purely valvular and secondary to a rheumatic infection.

Case 1. The first case, one which I had before you some time ago, is of cardiac disease in connection with an antedating rheumatic trouble which the history leads us to suppose was the prime factor in bringing about the heart trouble. This tendency is characteristic of rheumatism and some of the infectious fevers, especially scarletina. There is a past history of rheumatism at the age of nineteen, but of no cardiac trouble until much later. The physical signs are an enlargement of the left ventrical manifested by the characteristic displacement of the apex beat, an enlargement of the percussion area to the left and also of cardiac dullness to the right. The pulse is weak and uncertain and cannot be recorded by the sphygmograph. Auscultation discloses a systolic murmur at the apex and presystolic rumbling outside of the apex. There is, besides, an accentuation of the second sound. Summing up, then, we have an enlargement of both sides of the heart, a systolic murmur centered at the apex and a presystolic rumble. These symptoms are amply sufficient to establish a diagnosis of mitral stenosis followed by mitral regurgitation. The lateral extension of the area of cardiac dullness seen in this case is in direct contradistinction to the vertical increase in aortic regurgitation. Auscultation practically establishes our diagnosis. The sharp accentuation of the first sound preceding the presystolic rumble, is decidedly characteristic, since in no condition other than that of mitral stenosis is this found as we here have it. It is due to a sudden tension of the valve causing it to close with a snap and consequent upon the small amount of blood permitted to enter the left ventricle. Such accentuation is never heard in any other condition. I have also noticed a decided enlargement of the liver, due to congestion, and causing an increase in size of the abdomen together with some tenderness. The pulmonary symptoms are not very marked, there being a slight dyspnœa as evidenced by her rapid breathing. The mitral stenosis dates from the patient's nineteenth year; for several years following there have been no marked indications of heart trouble. The compensation may have broken down at times, but has invariably re-established itself and until now we have had no marked symptoms. This course is very typical of mitral stenosis. The case presents, besides, a history of repeated miscarriages, which, I am confident are dependent upon the congestion due to the valvular trouble. The lengthy maintenance of compensation in mitral stenosis is due to the fact that it is a gradually progressive lesion and leaves the aorta and its branches, most particularly the coronary arteries, practically unaffected. This state continues until by a sudden distension the valve is ruptured or until an intercurrent affection brings about the breakdown. Extreme stenosis, however, finally cuts off the blood flow of the aorta to such an extent as to deprive the coronary arteries of sufficient nourishment for the heart, causing thus a weakness of that organ and a break of compensation. In mitral cases, however, unlike aortic cases (especially those dependent upon atheroma) the conpensation can restore itself. This case is

one of mitral stenosis dependent upon rheumatism. I will discuss its treatment in connection with the next case.

Case 2. I wish to show you in association with the first case one in which the disease is due to a fatty change of the heart rather than to a rheumatic trouble. This woman is thirty-two years of age. She presents a history of measles and whooping cough in her childhood. Since then her health has been good until the present trouble set in. There is no history of rheumatism or tonsilitis. She was married at sixteen and has had seven children, four of whom are living. The present illness commenced seven months ago after the delivery of a child. She noticed upon rising in the morning a shortness of breath and a fluttering of her heart. Her legs and abdomen became swollen and a dry cough set in. The only pain experienced has been a stitch in both shoulders. The cough did not yield to ordinary remedies, but was improved by bleeding, six to eight ounces of blood being removed. In both of our cases the administration of digitalis and codiene was followed by a delirium which disappeared upon withdrawal of the drugs. In order to ascertain which drug caused the delirium each was given separately. This disclosed the fact that the codiene was the moving factor. Even the smallest dose of which, or in fact, any of the opium derivatives may in these cases, especially in women, cause delirium, and an effect directly opposite to their ordinary sedative action. In this patient I found a distinct murmur associated with the second sound. Percussion reveals an ascending deep cardiac dullness (the superficial dullness is of little consequence in these cases). The lower border of the liver reaches far below the ribs and causes a considerable distension of the whole abdomen. A soft systolic murmur is heard under the sternum, and I find a sharp accentuation of the second sound with a distinct aortic murmur. The heart is much enlarged. There is an albumenuria with a low specific gravity of the urine. These clinical symptoms together with the history of an oncome after pregnancy and a negative history of rheumatism, gout, or any of the infectious fevers, establishes a diagnosis of secondary disease of the heart due either to atheroma or to muscular disease of the heart. Were there no evidences of aortic atheroma the indications would be of a myocardial case associated with the left ventricle and brought about by the straining of pregnancy. But we cannot overlook the significance of these aortic signs. There is no very marked evidence of aortic regurgitation, no whiteness of the skin, nor the peculiar slapping character of the apex beat. I do notice, however, evidences of a slight weakness of the aortic valve. This has probably resulted in a damming back of the blood, a consequent dilatation of the left ventricle, leading finally to mitral regurgitation. There is in addition an unquestionable renal trouble interfering necessarily with the nutrition of the heart. It is difficult to tell whether or not this trouble antedated the aortic weakness. In all probability it was the primary lesion and brought about a myocardial degeneration.

Our best test for differentiating between this case, which we suppose to be of a myocardial nature, and our first case, the purely valvular trouble, is by the therapeutic reaction. In the purely ventricular disease rest and the administration of digitalis frequently brings about an alleviation of the trouble. If these remedies fail the indications are of myocardial disease. This yields better to a tonic in conjunction with the salts of mercury and iodine. This patient is younger than the first, with symptoms that are not so urgent, yet we find in her less improvement. Our indications are myocardial, and the efforts of treatment must be made toward this direction. In the present condition the treatment is rest and the administration of cardiac tonics such as digitalis, which may be given in small doses, even in cases where larger doses prove harmful. Repeated venesection rapidly relieves the overdistension of our patient's heart. In conjunction with the digitalis, we may administer iron, arsenic and strychnine. Small doses of the chloride of mercury combined with our tonics are especially beneficial. This treatment will be continued until compensation is well enough established to enable the patient to leave her bed. Then, if her circumstances permit, she should partake of the effervescent carbonic acid baths of Nauheim, Germany, together with the resistant treatment practiced by the Sharp brothers. This consists of the movements of flexion and extension made against the resistance of an operator. The effect of this treatment is to draw much blood from the central vascular system to the periphery, since during exercise the arteries of the muscles dilate and draw the blood into their substance. This is, therefore, a bleeding into one's own vessels and results in relieving the overdistension of the heart, making it thus more susceptible to remedial agents. The baths are at first of the diluted and decarbonated waters of the Nauheim springs, containing sodium chloride with calcium chloride and some magnesium salts. The concentration is gradually increased until finally the concentrated waters at a temperature of from 82° to 95° Farenheit are used. The immediate effect is an irritation of the skin resulting in a drawing of the blood to the periphery of the body, greatly reddening the skin. Moreover, by a reflex irritation from the peripheral nerve, some scientists believe that there is a stimulated contraction of the heart. The compensation being once re-established the after treatment of tonics and hæmatonics should be vigorously prosecuted for some time. This, with proper diet and rest will do much to prevent a recurrence of the trouble.

A Curious Speciment of Urine.—Here is a very interesting specimen. This blue liquid, resembling a solution of indigo, is urine—a specimen of blue urine. The patient from whom this specimen of blue urine was obtained was taking methyline blue for inflamation of the bladder. Methyline blue is used for various purposes; it is successfully used in malaria. It is believed to be the only drug which can be considered a substitute for quinine. There is no doubt of its efficacy in cases of malaria, and so, if there is any reason why quinine should be contra-indicated, you can treat the patient with methyline blue, and you need not be alarmed if, after a few doses, the urine resembles this blue specimen in appearance. There are many people with such pronounced idiocyncrasies against quinine that they would almost prefer to allow the attacks of malaria to continue, in the hopes of their cessation without medication, than to be treated by the administration of quinine. I have known a few grains of quinine to produce the greatest itching of the whole body, hives, face swelling enormously, the eyes being closed by the swelling, and the patient in a condition of extreme discomfort. This will occur in some people every time they take quinine. In such people you have methyline blue as a substitute for quinine, and a perfectly harmless drug it is. I used it a few years ago in a case which was in this hospital,

the patient taking two grains of methyline blue every two hours, and resulting in no bad symptoms whatever. Occasionally there has been found blue urine in cases which have baffled the physician. A child may pass urine of this kind, and at first you are completely baffled; you do not know how the blue got into the urine; you do not know that it is methyline blue; you would not suspect that it was methyline blue, but that you know that certain candies are colored with methyline blue. It is a harmless dye,and if a child eats a large quantity of candy so colored, the child will pass a large amount of blue urine. It is well to be informed on this point.

The next case shows general œdema of the lower extremities; there is some fluid in the abdominal cavity and peritoneal sac, it having begun at the feet and extending upwards, in direct contrast to the boy, which began at the heart and extended downwards. This woman was admitted this fall. Her normal weight has been 100 pounds. She has an occupation which requires a person to be standing all day. There is no necessity to give any history of the family, except to say that both parents are living; there is no more taint of phthisis in her family than in most families, though one sister died of consumption; one brother is in good health. This patient was also healthy as a child with the exception of certain eruptive fevers, one of which was smallpox. She had good health up to the time of an attack of neuritis, but she lays stress upon the attack of neuritis because there seems to be no doubt that this was the point of ill health beginning. Now she is suffering from dyspœa, and she has seen no œdema until a recent period; in fact, she has been well, she believed, and she was well to all intents and purposes. She was able to pursue her work, and we cannot call it sedentary, because she was standing on her feet all day. About a year ago there began to be some menstrual irregularity; the irregularity consisted rather in amenorrhea, rather than irregular menstrual flow. At the same time she noted a swelling in the feet, which gradually extended upwards,and soon was manifest to her by a feeling of tightness in the abdomen. Then she began also to have a sensation of smothering at night when her head was low, and she gradually had to use a pillow to elevate her head somewhat. A cough soon developed and has continued, the expectoration being yellowish and the sputa tenacious. Here is a very significant statement in regard to her appetite. She has a good appetite; at least, she feels that she needs food until she sees it, when all desire for it disappears. That is often the case with people whose stomachs are in a state of chronic digestion, as is the case in a person with chronic gastric catarrh. The urine is scanty, dark in color, and although it is not so stated, there is very little doubt that it would be found.

There is a loud mitral murmur, and œdema of the lower extremities is almost certain to occur sooner or later. I have known several cases of mitral stenosis, and many cases of aorta diseases to last for many years and terminate fatally, without a suspicion of œdema in any part of the body.

Non Specific Cirrhosis of the Liver.—This woman is 50 years of age; housekeeper; married; born in Pennsylvania; her personal history is negative; she is the wife of a workingman; her family history is also negative; she has had the usual affections of childhood. She has had pneumonia four times, once followed by pleural effusion; she had influenza 12 years ago; present illness apparently five months duration. The following is her present history: She took cold and had an acute gastro intestinal catarrh, slight coughing and pain, dull in character; vomited occasionally; bowels constipated. Three weeks ago she vomited blood; two weeks ago had pain in the lower abdomen and following this there was dyspnœa, and she has seen no œdema until a recent distension of the abdomen. The distension increased, which was followed by coughing, dyspnœa, weakness, loss of flesh, and gastro intestinal symptoms. On physical examination there was emaciation, no signs of disease of the nervous system or heart or lungs or kidneys. Physical signs of ascites, of a small liver, large spleen, veins of the abdomen enlarged. The dyspnœa was an alarming symptom, worse at night and apparently mechanical.

This is undoubtedly cirrhosis of the liver; non specific in origin. The chief symptom is ascites and dyspnœa. No cause to be found for the dyspnœa other than pressure upwards on the diaphram, so that in the case of the dyspnœa the treatment of the dyspnœa will be the treatment for the ascites, and this we have carried out in a measure with the usual plans of medication with success. Therefore, we want to remove the fluid. I have never seen a case of ascites which was not operated lying down for the removal of the fluid. We shall perform the operation of paracentesis. First by incision. Usually the paracentesis is sufficient. Second, if tapping fails, which it sometimes does. Under any circumstances the operation must be done with every precaution, rendering antiseptic the following operation: Get the patient in proper position. Have her in good position and well protected. The urine should be passed before coming in the operating room. Be very careful about that. Always see that the bladder is thoroughly emptied. The instruments used in the operation should be thoroughly sterilized. For the relief from pain, freeze the part or make use of local anæsthesia. Here we see the pelvis is distended about as high as the umbilicus. The cause of this distension is the accumulation of the fluid in the abdomen; it is movable; there is dullness. The point of operation is about midway between the pubes and the umbilicus. We use the aspirator. We have first to consider whether we have the indications for the operation, and the conditions under which the operation should be done. The fluid does not run like a straw-colored serum. The evidence is very strong that there is simply an accumulation of fluid in the peritoneal cavity. The distension may be due to peritonitis or inflammation of the peritoneum. It is rare that tympany occurs in ascites. If the operation has been done two or three times we often get a localized peritonitis, and in consequence, subsequent tappings are rather difficult; hence it may be necessary to use other means, and this we will do. It can be done as readily as before, but we will not do it unless it is necessary to open the abdomen. The operation is not dangerous and always gives relief. A stimulant is given at the time of the operation, if the patient is depressed. The patient is then put to bed and watched carefully should any unforeseen result follow. In some cases collapse follows. I have never seen them. The enormous amount of fluid having been removed, the pressure upon the other internal organs is very much decreased. The frequency of the operation depends upon the rapidity with which the

fluid returns. When the fluid returns rapidly it is significant. If it returns within 48 hours or 60 hours, or even within three days, the chances are that there is an obstruction in the portal circulation or perhaps an adhesive inflammation there. This is a diagnostic point. I am an advocate of repeated tappings. By removing the fluid and removing it frequently, we minimize the results, lessen the pressure upon the internal organs, and relieve the collateral circulation so that if possible it may be re-established. Therefore, tapping should be done frequently with the hope that it will bring about a cure of that condition which leads to the ascites. There are cases on record that have had as high as 150 tappings emptying the abdominal cavity each time. After this tapping the return of the fluid has been known to stop and remain so for years afterwards.

The operation of tapping is mechanical. The medicinal treatment must consist of cardiac stimulants, diuretics, diaphoretics, and laxatives. The diet should be limited to milk and other easily digestible foods, avoiding fats and saccharine foods, such as sugar, potatoes, etc.

Avoid tapping when tympany is present. There must be a uniformity of distension,and enlargement of the veins over the abdomen. The non-disappearance with the withdrawal of fluid, of the distension of the abdomen from the stomach down to the pubes, would indicate that there is tympany or the presence of gas. In the case of ovarian cysts avoid tapping. The trocar should not be run in any further than into the fluid; it is not necessary to run it in very far. The most important thing is really the watching of the bladder so that is empty, for a full bladder will distend the abdomen; then there is danger of puncturing the bladder if the trocar is run in more than is necessary. In my judgment it is better not to begin the operation of tapping until you know just how full the bladder is. It is safer to use the catheter. The umbilicus becomes thin in some cases and ruptures, and this little opening in the abdominal wall will have a curative effect in draining off the fluid. A spontaneous leakage will often afford relief, and when it occurs it may be kept up for a long time. Persistence of the recurrence of the gastro-intestinal catarrh, of vomiting, especially in the mornings, vomiting of blood, diminution of the size of the liver, apparant enlargement of the spleen with splenitis. There is generally a little œdema of the feet, and no fever throughout the period of observation in this case; no evidence of tuberculosis or carcinoma, which might give rise to ascites. We will preserve a sample of this fluid just removed from the abdomen, and make a test of it before we can be positive as to the disease which gave rise to the ascites. After each tapping it is important to take the pulse, as it is often increased after the removal of fluid. We will give this patient calomel to be followed by a saline purgative in the morning.

Inducing Premature Labor.—This patient is a colored woman aged 28 years, three of whose children are dead, two in infancy, soon after birth, and the third died at the age of 9 years. She had one labor that was fairly successful. There was difficulty in all her labors, especially the last one, and in this the infant was larger at birth than any of the others, following the rule that infants have a tendency to get successively larger at each pregnancy. Statistics show this to be undoubtedly true. In this case her history shows that the children increased in weight up to the fourth labor. Women have been successful in delivering nine babies, and the Cæsarian section had to be performed in the tenth. The rule is the children increase in size progressively up to the fourth; and in this case there was no difficulty in all her labors except the last. The child was two months overdue, and no forceps were used. When I saw her last she said she was due next week. This statement must, however, be taken with some degree of allowance, as she is a colored woman, and they are usually inaccurate in their statements. Now, as to her time being due next week, she must be in error. She said she menstruated after she became pregnant, which is generally speaking an impossibility. As near as we can tell, she is not due until December. We will have to inform ourselves on that point. It is not safe to induce labor as early as the seventh month. The object is to save both mother and child. This woman's abdomen is fairly enlarged and uniform in shape. We will have to get the exact position of the fundus before we can go ahead. We will try to ascertain the position of the child; if it is down in the pelvis she is more than seven months pregnant. It is dangerous to attempt to force the head down into the pelvis. The appearance of this woman bears out this statement when we consider the kind of pelvis we have to deal with—it is a case of rachitis. It is important to remember that in cases of this kind the induction of labor is indicated. Here we have a conflicting statement—only a week off from term. We have to examine into that point for ourselves. My impression is she is a week or two to term. It would be a disadvantage if this woman fell into labor without a day. It seems best for us to push the labor now. Suppose she is a week or two to term; suppose we let her go on for a week or two or ten days; the difficulties of the labor will then be considerably increased. If she should go considerably over time, we will then encounter difficulties, calculating on this child being the largest this woman has ever borne. The size of this child's head in proportion to the size of the woman's pelvis will be greater this time than before. For this reason we will advise the immediate induction of labor; it is not a dangerous operation; no risk to mother and not to the infant if properly done. Of course, the child is born only a week or two ahead of time; there is no disadvantage in that.

I shall suggest one of the two methods I have spoken about. As we have already used one plan, it is advisable to show you the other, and we will contrast them that you may see the advantages and disadvantages of the two. The introduction of the bougies is easy, but the introduction of the rubber bags is not so easy.

I am not very well acquainted with this woman's history, having seen her only once before this time. Several examinations are always better than one in order to safeguard the patient and child. There is a prejudice against the induction of labor, growing out of the unskilled methods of employing it, or using it at the wrong time, or when it is contra-indicated by the condition of the patient. Personally I have never seen the least bad results for the child or the mother. Of course, one must be very careful when he operates, that he may not be charged with producing abortion or being guilty of criminal mal-practice. Where death occurs, which is very rare, I am in a position to show that it is a mere co-incidence, and not caused by the operation of the induction of labor. If the physician can show that he has induced labor on good and sufficient grounds to save the

life of the mother or of mother and infant, he is perfectly safe within his responsibilities.

The Champetriere Deveie method is the one employed. First, we shall use the bichloride solution; sterilize the instruments; sterilize the aprons; sterilize the rubber gloves worn by the operator; and, in fact, sterilize everything used in the operation. You can sterilize the vagina as well as the skin. Then two rubber bags with small rubber hose, the bags holding about four ounces of water each, will be used. The rubber bags after being sterilized, are introduced back well into the internal os; then by means of a Davidson syringe, the bags are dilated by forcing about four ounces of warm water into them. Care should be taken not to use too much pressure, so as to avoid rupturing the uterine wall. The bags are introduced by taking one at a time between the first and second finger, the palm of the hand looking upward. This is done tentatively.

Anæsthesia is never necessary in these cases. It may be well to use it in primiparæ; but ordinarily, it is not necessary.

The Champetriere Deveie method is surer, quicker and safer. It can be done in three or four minutes. In dilating the bags it is necessary to be very careful not to force more than four ounces of fluid into each, as there is danger of bursting the bag.

Operation in Cases of Perforation in Typhoid Fever.—The patient is a young girl, fifteen years old. When she came in she gave a history of continued fever, and at the time of admission the temperature was slightly elevated, a little over 102°, and as you can see by this long chart, the temperature remained elevated for twenty days, when there was a sudden fall from 104° to a point much below normal, or about 96°. Up to that time there had been nothing unusual in the progress of the case. In the course of twelve hours the temperature fell 8°. Now, of course, in diseases with crises, such as pneumonia, or lapsing fever, such a condition would not excite alarm; on the contrary, it might be hailed with satisfaction, indicating either complete cessation of the disease, as it does in pneumonia, or intermission or marked remission, but in typhoid fever it invariably excites alarm, being usually indicative of either hemorrhage or perforation. In this case there was no hemorrhage to account for the sudden remission, but there was perforation.

There have been a few persons who have supposed themselves to have recovered from perforation in the course of typhoid fever. A famous physician of my acquaintance was firmly convinced up to the time of his death that he was one of the survivors of this generally fatal condition. He certainly had typhoid fever; he certainly presented this sudden remission in the course of the disease, accompanied by great shock and intense pain in the abdomen, with tympanic distension without hemorrhage, and after remaining in this condition for several hours, he slowly recovered. He was always convinced that he recovered from perforation.

The perforation in this case occurred on the twentieth day. The patient was placed as soon as expedient on the operating table and ether administered immediately. An incision was made under the median line, of which there is a distinct cicatrix several inches long. The perforation was found almost immediately under the incision, no time, therefore, being lost in searching for it. The patient was supported during the operation by hypodermic injections of caffeine and spirits of camphor, twelve minims of the camphor tincture were at first administered when the operation was begun. The intestine was sutured back and forth and then ordinary suturing was done. Flushing with saline solution was employed copiously. The abdominal wound was closed by through and through sutures, and a large string of iodoform gauze was packed in tightly over the sutured bowel, and the end left near the upper incision; at the lower part of the wound above the third suture a drainage tube was introduced. The arms were rubbed gently with alcohol and hot cloths were applied to the abdomen. Another hypodermic was administered in the right thigh. Fifteen minutes later the pulse was 160. Oxygen gas was administered during the night, and by 2:45 A. M. the pulse had dropped to 132.

It is impossible and unnecessary to enter into more minute details concerning the operation and the subsequent history of the case, but later the temperature began slowly to ascend, just as it does in cases of relapse; it went up by successive steps and then pursued a more regular course than it had previously done. There occurred an intestinal hemorrhage; this did not recur. The temperature soon fell again to its former level, and from that time on the course of the fever was progressively favorable, and very gradually reached a normal point and has remained there ever since. We are very happy to have seen a case that has recoverd from this operation. I remember a case of seven or eight years ago which was operated on at the hospital, but unsuccessfully. At that time there were very few successful cases of the kind reported. The number has increased, and I have no doubt that it will continue to increase. A very interesting point in connection with this case is the fact that operation was not done until more than twenty-four hours after the first sign of perforation. This was due to causes unavoidable, but it is not a course to be recommended, but it shows that one need not despair, or rather, it shows that the operation is justifiable as long as the patient is alive and gives the slightest promise of reaction; as long as the patient is not actually dead.

The Gall Bladder.—The question as to the value of the gall bladder to the organism is remarked on by Woods Hutchinson (*Med. Rec.*, May 16; *Jour. A. M. A.*). He looks at it from the point of view of its comparative anatomy and its mechanical action and the variations we find in its condition. He remarks, to sum up, that: The gall bladder is a nearly functionless organ, inadequate in size to act as a reservoir of any value for the bile, inadequate in muscular power and mechanical position to exercise any important effect on the pressure of the bile flow, entirely absent in many species without interfering with the processes of digestion or the vital functions in any way, capable of removal from a species in which it is normally present without noticeable injury, and chiefly notable as a settling basin for the formation of gallstones, a suitable harbor for the multiplication of pathogenic bacteria, or for the assumption of pathogenic properties by non-pathogenic forms. In short, it seems a source of danger at least double any possible usefulness which it may possess.

M. Adolf Deucher, who was recently elected president of the Swiss republic for the third time, is a member of the medical profession.

MISCELLANY.

—During 1902 the death-rate for the city of New York, 18.74 per thousand, is considerably the lowest ever reported in that city.

—The heaviest man in Germany, probably in the whole world, is Hans Fromm, a hotel proprietor at Willenberg, West Prussia, whose weight is 502 pounds.

—A singular case is cited in the *British Medical Journal* in which a Dr. Gale, a doctor of philosophy and not of medicine, who is spoken of as a "consulting medical electrician," received a fee of $50,000.

—Dr. O. H. Snider, Atlanta, arraigned on the charge of distributing free packages of cocain to negroes, was found guilty, February 25, fined $500, sentenced to 30 days in the stockade, and bound over to the city court on a $1000 bond. On his promise not again to offend, the fine was reduced to $100.

—In the suit of Mrs. Parmelia J. Davis against Dr. Edwin H. Pratt for $3000 damages on account of an operation alleged to have been illegally performed on her by the defendant, without her or her husband's consent, the court gave judgment for the plaintiff for the full amount.

—According to an Australian newspaper, two men there claim to have been cured by cancer by taking about a tablespoonful of molasses four or five times a day. In one, a cancer at the root of the tongue disappeared entirely after ten days' treatment, but the cancer of the stomach in the other required three months' treatment.

—Dr. Figueria, of Brooklyn, N. Y., has successfully performed on a hospital patient of that city an operation which has hitherto proved fatal in all similar cases. The patient was suffering from paralysis of the right side and tumor of the brain, due to a fall. To remove the rapidly enlarging growth twelve square inches of the skull were lifted and the tumor and an eighth of the brain removed. The next day the paralysis began to disappear and the man's sight to return.

—The morbific agent in smallpox, it is announced, has been discovered by Prof. Councilman, of Harvard, an accurate and painstaking observer, who had ample opportunity for investigating under the Boston Health Department during a protracted and severe epidemic of the disease. The protozoan proved to be the cause of smallpox is a germ, inasmuch as it is a single cell with a vast power of self-multiplication, and it is a microbe because it is small, but it is not a bacterium, either micrococcus or bacillus, for they are vegetable fungi, while the protozoan is animal.

—The Institute of Medical Women which was opened two or three years ago in St. Petersburg has recently conferred diplomas on several students for the first time. In reply to an address by the council of the institute, the Czar has telegraphed the following gracious message: "The Czarina and myself sincerely thank the council of the St. Petersburg Institute of Medical Women for the sentiments which it has expressed. May God bless the Medical Women, who are accomplishing a generous and philanthropic task by working sincerely and honorably for those who suffer, with that lofty self-abnegation which is characteristic of the Russian women." Eleven women received diplomas qualifying them to practice medicine.

—Dr. Achilles Rose says the word "oophorectomy" should not be used to denote removal of the ovary—its true meaning is "removal of the duty on eggs!" The word to be substituted is oothectomy.

—L. F. Appleman (*Amer. Med.*) states that when solutions of bichloride of mercury are made with normal salt solution, instead of water, they do not cause the slightest pain when applied to mucous membranes.

—Slight practice will work wonders. Write the alphabet through five times a day with your left hand for a month, and at the end of that time you will be surprised to find that you can write as well with your left hand as with your right.

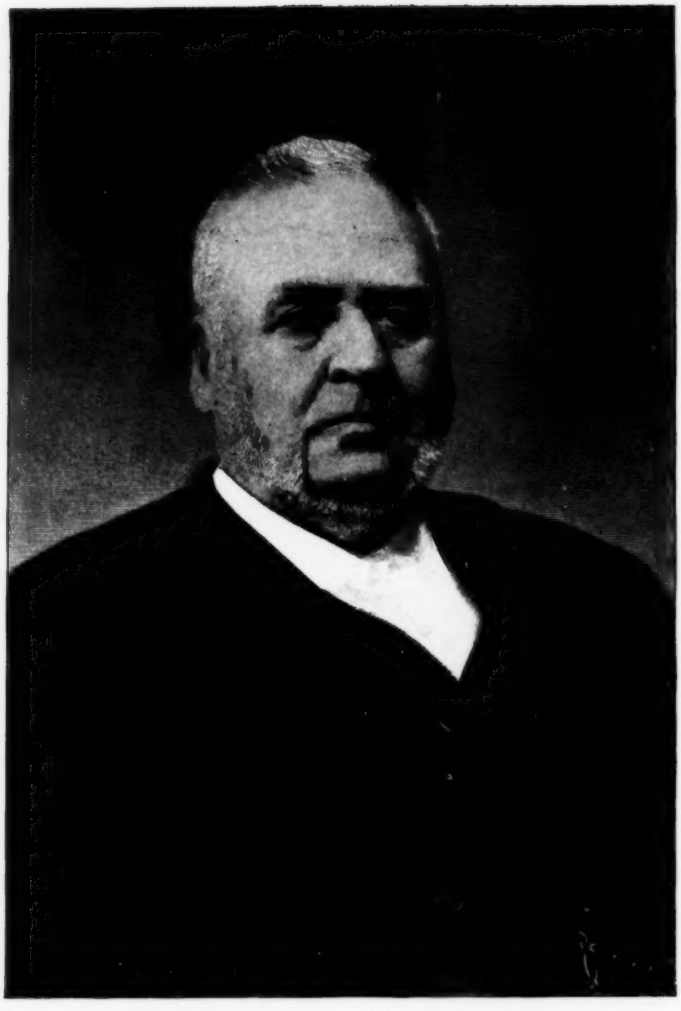
—According to a report recently made by Dr. J. A. Deghoree, chemist to the Health Department, wood alcohol, instead of ethyl alcohol, was found to have been used in the preparation of Jamaica ginger and spirit of ammonia in forty out of 215 samples purchased of New York druggists, as a result of this, one arrest has already been made, and proceedings are to be instituted against a considerable number of other pharmacists.

There is said to be a very curious and interesting class of epileptic cases noticed among the invalided soldiers who have returned from South Africa. The number of these cases observed in South Africa was astounding, over 2,000 according to the report. The epileptic attacks were not caused by wounds, but by harsh, screaming detonations of modern firearms, particularly cannons, and by the explosions of lyddite shells. It is feared that these epileptic attacks will be incurable.

—A well-known sanatorium in England has recently made arrangements for an 8-weeks' cruise in the Mediterranean, especially devised for the treatment of patients with chronic alcoholism. An entire steamer has been chartered, upon which no alcohol will be allowed, and there will be a resident physician on board. It is expected that the constant change of environment, together with the complete isolation from alcohol may afford lasting benefits to the patients. It is, at any rate, an interesting experiment.

—The latest triumph of German synthetic chemistry is a product identical in every way with theopylline, an alkaloid existing in tea leaves. The manufacture of the substance involves twelve synthetic operations, but, despite this fact, the artificial theophylline can be sold for $2.30 an ounce, while the natural product costs $93 an ounce. Synthetic theobromine is promised soon, and it is declared reasonable to hope that synthetic morphine and quinine may be obtained before long.

—As illustrative of the subtleties of which the French mind is capable, it may be well to mention that recently, in the Tenth Chamber of the Paris Correctional Courts, the court found that Mme. Mazouir was guilty of committing adultery with M. Orderie, but that M. Orderie had not committed that offense. In accordance with this decision the fair delinquent was fined twenty-five francs, and the disorderly M. Orderie went free. The explanation of the judgment lies in the fact that, whereas in adultery all methods of proof are admitted so far as concerns the woman, only *in flagrante delictu* evidence and written proof are admitted in the case of the man.



Egbert Guernsey A.B. LL.D.

THE KINESIPATHIC TREATMENT OF RECTAL DISEASES.

BY G. H. PATCHEN, M. D., NEW YORK.

THE statement that nearly every disease which affects the rectum can be radically cured by "movements," without the aid of either drugs, local applications or the knife, is so contrary to current belief and practice that it will be looked upon by the majority of physicians with surprise if not with incredulity. Yet it is perfectly true. A little accurate knowledge of the intimate relation this much abused part of the body sustains to the circulation and the functions of more vital organs, is sufficient to establish its theoretical possibility, while there are thousands of persons throughout the world who have experienced its practical realization. All physicians, regardless of the school of practice they represent, will agree that disease cannot exist inseparably from its causes, and that remedy is best and most to be preferred which is able to remove these causes in the most radical and permanent manner.

There are three principal causes of rectal diseases. First, local congestion, or venous stagnation; second, the weight and pressure of overlying organs; and, third, an impure state of the blood.

Any discussion of the first of these causes for the purpose of determining the best method of its removal, must take into consideration the fact that, like the brain, uterus and some other highly vascular organs, the rectum has no direct control over its own circulation. It is one of the organs of the digestive system, and the veins leading from it are branches and twigs of the portal vein which extends to the liver and is charged with the duty of carrying the blood away from the lowest segment of the digestive tract as fast as it arrives.

In health this large and important vessel is equal to the task imposed upon it, but any obstruction to the normal flow of this venous outlet is sure to result in more or less congestion of the rectum because, by reason of its position, being the farthest removed from the influences which keep the portal circulation active and vigorous, it is most unfavorably affected by gravitation.

If we read our physiology correctly, we learn that the suction or lifting force exerted by the rythmic, respiratory motions of the diaphragm are more than sufficient to counteract the influence of gravitation, and, consequently, are of the greatest assistance in carrying forward the venous circulation, from the lowest portion of the trunk, toward the heart. It is worthy of notice that this aid is afforded at the very point where it is most needed, namely, at the centre of the body, near the termination of the venous currents; where the veins are the largest and their contents the heaviest.

But although all physicians possess a theoretical knowledege of this important function of the diaphragm, very few seem to know that its defective action is the dominant causative factor of all rectal diseases of a congestive type, or that, by cultivation, it can be made to exert a more powerful and permanent curative effect than can be procured by any other means.

The uplifting effect produced by the respiratory excursions of the diaphragm is not confined alone to the fluids within the abdominal veins; it extends to and includes all of the abdominal and pelvic viscera—even the rectum itself.

When the diaphragm rises, from one to three inches, as it does during every expiratory act, a lifting force, equal to that exerted by the piston of a pump, having the same dimensions and moving the same distance, is brought to bear upon all parts below it. As the abdominal and pelvic cavities are continuous, this lifting force is operative at the lowest part. It is the power which sustains the several organs of this region in their respective places and prevents them from settling down, by their own weight, upon the rectum, thereby seriously interfering not only with its circulation, but with the proper performance of its other duties.

Impurities of the blood generally manifest themselves locally in the form of eruptions, boils, fissures, abscesses, ulcers, etc., wherever, for any reason, the circulation is most sluggish. For this reason the rectum is too often an unwilling but inviting field for the active and pernicious display of diseases of the kind just mentioned.

It happens, therefore, that rectal disorders always exist remote from their causes. From this circumstance the futility of attempting to remove them, radically, by means which produce only a local effect, becomes readily apparent. Remedies of this kind may, and often do, afford temporary relief, and, for this reason, are sometimes useful and, in emergencies, even indispensable, but they are incapable of effecting a cure.

The true and all-sufficient remedy for every curable form of rectal disease is found in the various processes and exercises of Kinesitherapy, or the "Movement Cure." From them may be selected such as will re-establish and invigorate the venous circulation, remove the weight and pressure of overlying organs and purify the blood.

No fear need be felt that kinesipathic methods for aiding the venous circulation and affording vertical support to all parts and organs below the diaphragm will be inadequate or fail in the presence of severe and aggravated cases of rectal engorgement or pressure, for, as has been stated by the most competent authority in relation to this matter, "not one-fifth of the fluctuating space of the trunk is called into use by the usual respiratory effort, hence there is an enormous reserve both of the mechanical capacity and the forces which control it," which can by proper cultivation be called forth to be used for curative purposes.

The following condensed report of a case which was treated by Dr. Taylor by kinesipathic methods exclusively is appended as a practical verification of their efficacy, and, incidentally, to illustrate the manner of their application.

The statement that in the medical conduct of this case no auxiliary treatment was employed must not be construed to mean that the plain and imperative demands of hygiene were ignored. These, as is well understood, nowadays, are indispensable adjuncts to every successful form of treatment—the success being directly in proportion of the extent with which all other prescribed measures harmonize and co-operate with them.

Hemorrhoids: This distressing and very common complaint, so easy to palliate but so difficult to cure that its victims seldom hope for anything more than palliation, has many assignable causes, but only one which is real. The contributory causes should of course be ascertained and, as far as possible, removed, but the real cause—the cause which more than any other demands remedial attention, and whose presence, regardless of the nature of the treatment employed, renders a cure impossible—is the lack of sufficient respiratory power and motion to thoroughly aspirate the portal vein throughout its rectal

ramifications, and maintain the unobstructed flow of their contents.

The therapeutic problem which all cases of this form of disease presents is purely a mechanical one, and mechanical methods afford the safest, quickest and best means for its solution.

The mechanical resources of a remedial nature which are at the command of kinesitherapy leaves nothing to be desired. They are not only extremely relevant and powerful, but numerous, and are as well adapted to overcome the many annoying and aggravated complications, as headache, various phases of indigestion, torpid liver, constipation, etc., as they are to remove the dominating conditions which relief is desired.

Bleeding Piles.—Rev. Dr. M., at the urgent request of friends who knew both by experience and observation of the efficacy of kinesipathic methods of treatment for this and similar affections of the pelvic and abdominal region, came for consultation and treatment for a very serious and prolonged case of "bleeding piles." He had been a constant sufferer for over twenty years and had sought relief in vain, in spite of the efforts of physicians he had consulted and the multitude of remedies he had employed.

There was loss of blood, almost daily, in such amount as to cause a sense of weakness and debility which eventually became so great that at the advice of his family physician he gave up his work and went to the country with the hope that a complete change in the manner of living, without occupation, might result in a cure. But although his general health improved, the local trouble persisted. After a few years an attempt to resume his former work was attended with such an aggravation of the disease and accompanying weakness that, as a last resort, he was persuaded to place himself under professional care.

The effect of the treatment was very gratifying and satisfactory. In less than a week the hemorrhages ceased, not to return. At the end of a month there was ample evidence that the improvement had become permanent. The patient's strength was also completely restored and he was discharged cured. There has been no relapse.

The curative measures employed, which are typical for all cases of this nature, were:

First: Rapid massage by mechanical means at the rate of one thousand changes of motion per minute, to each leg alternately for from three to five minutes. The effect of this process is to increase the amount of blood in the legs, which necessitates a decrease in the amount from that part from which the increase is derived. This is the pelvis, because it is the nearest and the supply is the greatest. The final result is to cause the muscles of the extremities not only to receive but to retain and use an increased supply of blood, and to correspondingly lessen the amount contained in the pelvic vessels with contractions of their calibre. In this way an equalization of the circulation is effected which is of great benefit in all kinds of pelvic disorders.

Second: Semi-active movements of the arms, technically called arm pulling, or arm extension.

This "movement" is given by an assistant with the patient, in a reclining position, the shoulders being elevated about forty-five degrees above the level of the hips. Standing behind the patient, the assistant grasps the patient's hands which have first been brought near the shoulder by complete flexion of the elbows, and gently draws the arms upwards and backwards until they are perfectly straight and parallel. After a few moments' pause the arms are returned, slowly, to their original position. This process is repeated four or five times, at intervals of a few seconds.

This movement may be either entirely passive or of the greatest strength and activity, according to the degree with which the patient participates in the execution of it. Its effects are to elevate the ribs and draw them apart, to increase both the chest and abdominal space at the region of their common boundary, to secure the inspiration and use of more oxygen for nutritive needs. to strengthen the muscular walls of the abdomen, and, by compelling more vigorous and extended respiratory motions of the diaphragm, to elevate all of the abdominal viscera and more thoroughly aspirate and quicken the venous circulation in the abdominal vessels.

Third: Similar passive movements of the thigh to increase the function and power of the muscles of this region. The patient remains in the same position as in the preceding exercise, with legs extended. The assistant grasps one leg with one hand just below the knee, and with the other hand holds the feet near the ankle, raising the leg by flexing the knee, until the thigh is at right angle with the trunk. The knee is then made to describe as large a circle as possible, with the hip joint as a pivot or centre, for from six to eight revolutions, and then as many times in the opposite direction. After a short interval of physiological rest, the other leg is treated in the same way.

While perfectly passive and, therefore, suited to patients in a weak or even helpless condition, this process brings into vigorous action not only the large extensior muscles of the thigh action, but also the deeper ones which are connected with the pelvis interiorly. The functional use of all of the thigh muscles—and especially of those which enter the pelvis, calls into them a flow of blood which acts as a drain, of more than a temporary nature, to the congested pelvic vessels. Upon weak and anemic patients this process has an effect similar to that of walking. As the patient becomes stronger, resistive movements of the hip and legs in which the patient cooperates, as leg twisting, leg flexion and extension are added or substituted.

Fourth: A process to strengthen the muscles of the middle and lower part of the body, which assist the respiratory motions of the diaphragm.

The patient sits erect upon a low stool, knees and feet wide apart, the latter firmly fixed and held, in some way, on the floor, hands clasped on the top of the head.

The assistant standing behind the patient, takes hold of his elbows and slowly *twists* his body in one direction as far as possible and then as far in the opposite direction. This double action is repeated six or eight times. This movement causes powerful contraction of the transverse and oblique abdominal muscles, diminishing the lower abdominal space and with the aid of the position assumed by the arms, increases the space of the upper abdomen and lower chest. It therefore allows more freedom of motion to the diaphragm and produces an effect which forces upwards all of the abdominal contents.

It is especially helpful in securing increased activity of the ascending venous circulation. If the patient's strength permits, this process can be changed into a very powerfully active one, simply by making the twisting motions himself against the greater or less resistance offered by the assistant.

Fifth: Passive kneading of the entire abdomen. This

can be most effectively done only by means of a suitable mechanical apparatus, as the proper position of the patient is that of lying, face downward, with the arms extended horizontally forwards. This position of the arms fixes the respiratory muscles of the chest and prevents them from participating in the breathing act, all respiratory effort is therefore thrown upon the diaphragm, whose upward motions are sufficient to urge the abdominal and pelvic organs into a higher plane and give an added impetus to the sluggish venous currents.

Each of the several processes should occupy from three to five minutes, except the last which should be continued from ten to fifteen minutes, according to the ability of the patient to retain the position with comfort. A matter of equal importance with the processes themselves is that an interval of physiological rest or repose, for five minutes or more, should be observed between each one. *A violation of this rule will make all the difference between success and failure.*

The reasons for these intervals are so clearly set forth in Dr. Taylor's excellent book on "Massage" that we quote them. Every local process "increases the blood in the part subjected to it, so that its nutritive ingredients may be applied to nutritive uses. The onflow superinduced, and the subsequent vito-chemical changes constitute a series of acts requiring *time* for full consummation. Limited time involves imperfect consummation of the effects inaugurated. A process quickly following prevents completion of effects inaugurated by the previous one, by interposing something else; the (intended) effect becomes diffused, wasted, instead of localized and completed. Processes without intervals produce only imperfect and unsatisfactory effects, at most crudely hygienic, but far from medical in their character." And, again, in another place, but referring to the same thing, he says, "the intervals between the processes should not be less than five minutes, and in general, the effect is increased more proportionally to the length of the intervals than to the length of the processes. The permanent good effects arise from the superinduced physiological activities, more than from the immediate action."

Referring again to the case under consideration, it is important to remember that the bleeding stopped, not solely because the weak and delicate hemorrhoidal vessels were strengthened and made more impervious, but because freer channels were made for their over-charged contents in other directions where they were used for nutritive purposes.

The happy results achieved in this case do not always occur so quickly in others, but *they occur just as surely*. The methods of kinesitherapy possess, as we have seen, all the features that belong to an ideal remedy. No other method surpasses it in relevancy and none, unless it be those known to surgery, equal it in promptness and efficiency. But the remedy which surgical measures afford is not a *legitimate* one, because it is directed against and removes merely the *effects* of the disease, leaving its causes as active and aggressive as before.

Unless other means, possessing real remedial value, are subsequently employed—means whose efficacy is neither enhanced nor diminished by the results surgery has produced—the disease will sooner or later return. Even in those cases in which, by the skillful use of the knife, all possibilities of a recurrence of the disease is prevented, this criticism of surgical methods is none the less deserved. It is true the disease will never return, but *it is because the only tissues in which it can manifest itself have been destroyed.* The causes have not been removed, or even disturbed, and their pernicious activity must and will eventually result in a serious derangement of some other function or organ. When it occurs, whether in a locality near to, or remote from, the original "seat" of disturbance, it is called another disease, and the two conditions are not looked upon, either by the patient or his physician, as sustaining to each other any relation of cause and effect. In view of the similar degree of vascularity that exists in both the brain and the rectum, added to the fact that neither organ has direct control over its own circulation, it would be interesting to know how many who die of apoplexy, or suffer from the disabling effects of a lesser degree of cerebral hemorrhage, have a history of having undergone a surgical operation for piles.

An intelligent use of the same and similar processes, modified to meet varying needs and conditions, are equally effective in overcoming what might be called more serious disorders of the rectum, as prolapsus, fissure, ulcers and even fistula.

Prolapsus: Prolapsus of the rectum, a disorder almost as frequently found in children as in adults, is readily cured by the systematic use of such "movements," or processes, as will increase the nutrition and power of all the muscles which co-operate with the diaphragm in the act of breathing. This can be easily done, as there are many kinitic processes which contribute to this result.

When this local weakness is unattended by inflammation, the following process, alone, is sufficient to restore the defective respiratory rythm to its full degree of activity and power and enable it to maintain its normal sustaining effect.

Lying face downward, upon a rug or hard mattress, with the elbows, toes and front part of the body resting on the support, the trunk is made to assume a straight horizontal position, the only support being that of the toes and elbows. After keeping this position a few moments, the body is allowed to descend to its original support. This movement should be repeated four or five times with appropriate intervals of repose.

This process causes a powerful contraction of the anterior muscles of the abdomen and compels all respiratory effort to be performed by the diaphragm. All of the organs below the diaphragm are elevated from one to three inches during each expiration and the protruding portion of the rectum is as effectually lifted into its normal position as though it had been pulled up by a hand reaching down from above. By daily repetition, this temporary effect soon becomes permanent. Should congestion or inflammation co-exist, the means previously described for equalizing the circulation must form a part of the prescription.

Fissure: This painful condition known as fissure, although attended with inflammation,and a more or less impure state of the blood, yields in a short time to the curative influence of appropriate "movements." The therapeutic indications for treatment, in these cases, are to diminish the local congestion; to straighten the folds of the compressed rectum, and establish a better circulation of blood, of a purer quality, throughout its mucous lining. No other means with which I am acquainted meet these indications more fully or in a more satisfactory manner. The same processes of rapid massage and semi-active movements of the extremities which, as we have seen, will divert the blood from the

surcharged hemorrhoidal vessels and employ it for nutritive purposes, will as certainly relieve the congestion and inflammation that attends and perpetuates the dry and painful condition of the rectal mucous membrane which constitutes the disease. The various processes which are available for elevating the pelvic contents and maintaining them in their normal position are certainly able to straighten out the compressed rectal folds and prevent their recurrence. With these important effects secured, there naturally follows a better state of the circulation not only in the parts involved by the disease, but throughout the entire body.

Rectal Ulceration: An ulcer of the rectum, although less painful than a fissure, is a more serious affection. It denotes a lower state of vitality and a more impoverished condition of the blood—two conditions which greatly militate against recovery and render local treatment, which would seem most rational and appropriate, entirely ineffective. In fact, although the disease has "a local habitation and a name," and is aggravated by accompanying conditions of an unfavorable nature, its real cause is the impaired state of the blood. As long as this condition of the vital fluid remains unchanged, the ulcer will refuse to heal in spite of any form of treatment, local or otherwise, that may be employed. But just as soon as, from any cause, the ingredients of the blood become normal in quantity and quality, the healing process will begin and go on to completion, even when local conditions seem unfavorable.

As a remedy for improving both the quantity and quality of the blood, rapid massage has no equal. It does for the weak and anemic what exercise does for the well. Applied in orderly succession to the muscular masses of the extremities and exterior muscles of the trunk, it rapidly oxidizes and eliminates the impurities that have accumulated in the blood as a consequence of the deficient chemical activities which have taken place in the system, hardens and invigorates the muscles it operates upon, and increases the demand for, and aids the digestion and assimilation of, food. Other processes, with which we are already familiar, gradually but completely remove the weight and pressure of overlying parts and organs and thoroughly aspirates the stagnant disease-engendering fluids of the ulcerated area.

As fast as these evidences of diseased action disappear their place is supplied with new vitalized material derived from freshly oxygenated blood, and, under the intelligent direction of the mysterious processes of nutrition, the foul plague spot of disease is soon transformed into tissue possessing all the attributes and evidences of health.

Rectal Fistula: Without doubt this is the most serious disease which affects the rectum. It is also the most difficult to cure, because the tough, hard and impervious membrane which lines it and which cannot be made to disappear as long as pus continues to be secreted by it, prevents the healing process. Here, as in the case of ulcers, the abnormal condition of the blood is the essential and dominant cause and, practically, the same kind of treatment will effect a cure. The only difference is that, after the blood has been purified and the inflammation subdued, additional local treatment, over the affected region, in the form of rapid massage, will be needed to cause absorption of the pyogenic membrane. Absorption of pathological products in any of the bodily tissues will always occur *whenever healthy conditions of the blood and the orderly processes of nutrition prevail.* The processes of kinesitherapy are peculiarly adapted to induce these desirable states of the system. It possesses, moreover, the decided advantage over many other methods which attempt to produce the same results, that it employs means of the same kind that the body makes use of in health, only intensifying them and making them operative at selected regions where they are most needed.

Did space and time permit numerous cases, not only of the special diseases we have been considering, but many others which have been cured by kinesipathic methods, could be cited. But to those without experience the most convincing proof of the ability of this specialty in medical practice to overcome and remove rectal disorders will be an opportunity to observe its effects in a few trial cases.

51 West 106th St.

THE OUTLYING PROVINCES OF THE DIGESTIVE SPECIALTY.

BY A. L. BENEDICT, A.M., M.D., BUFFALO.

THE writer has always held, during five years as a general practitioner and ten as a specialist, that specialism should imply *limitation* of practice, partly as a matter of economics in the ordinary sense, but mainly on account of the economics of effort and consequent practical ability. The exceptions to this rule are:

1. Residence in a small town in which some degree of specialization is convenient, but in which there is not enough at least of certain kinds of practice to warrant limitation of practice.

2. The transition period between general and special practice, the writer being a firm believer in the dictum that every specialist should have a preliminary training in general medicine, or rather, that every medical graduate should enter general practice and remain in it until he finds that his energies are being turned naturally into some particular channel. This rule, however, scarcely applies to chemists, pathologists and others not involved in the actual treatment of disease.

3. Emergency cases, first aid in which, should be forthcoming from every man whose sign may lead to the impression that he is a general practitioner. Of course, the aid rendered should be merely temporary unless in camp or other place, at a distance from a general practitioner or the appropriate specialist. In this connection, attention may be called to the fact that it is a matter of common sense and, therefore, of fundamental ethics, for the sign to indicate whether the practitioner is in general or special practice. However, until this opinion becomes generally accepted, it is better not to display one's specialty on a sign, as such a notice might seem to savor of quackery.

4. Cases in the family of the specialist or in what may be termed "dependents," or those in which the specialist occasionally is called by a general practitioner as a substitute, simply as a matter of personal accommodation.

All of these exceptions except the first, should amount to a very small proportion of the specialist's practice; otherwise, his good faith may be called in question.

The limitations of gastro-enterology, like those of other specialties, differ considerably according to individual tastes and abilities, as, for example, some ophthalmologists include an equal amount of ear work in their specialty, while others exclude this almost entirely. Some few gastro-enterologists are, essentially abdominal

surgeons, the majority are practitioners of internal medicine. Again, we find that certain gastro-enterologists lean toward chemic work, while others are especially attracted by problems in physical diagnosis, some are quite accurately described as "stomach doctors," others are especially interested in the liver, the intestine, the appendix particularly, or are really abdominal specialists. As in other lines, each individual ultimately defines his own specialty within a specialty.

Without regard to individual hobbies, it may be recognized that gastro-enterology includes some phases that are not strictly digestive, while on the other hand, the teeth, whose function is plainly mechanically digestive, are excluded, and, also, the pharynx, which is anatomically a part of both the alimentary and the respiratory tracts. The inclusion of the rectum is largely a matter of personal preference, but it should be considered that, while the rectum has practically no digestive function, its diseases are closely associated with those of the bowel above, and that it offers a field for therapeutics quite analogous to that of the throat and nose. The appendix, though not possessed of any digestive function—perhaps of no function at all except to make trouble—certainly can not be separated from the intestinal canal, unless we agree to the claim that its treatment belongs purely to the surgeon. I have, at present, sixteen case records in the active file in which the appendix has been palpable, tender and, in some instances, deformed, and in which the general symptomatology has pointed to inflammation of this organ. Most of these are now only nominally under treatment. In the course of a few months the appendix melts away and the tenderness disappears. Contrary to the surgical teaching, I do not note any very marked tendency to recurrence after thorough treatment. Of course, when a patient passes through an acute or subacute attack with the help of poultices and morphine and has no further attention, he is almost sure to have a recurrence. So, too, when an appendix is strictured and deformed, it is extremely improbable that anything short of operation can effect a cure. One of the sixteen cases referred to has been tided over his wife's pregnancy, in safety and comparative comfort to himself, in order to spare his wife the nervous shock of an operation in the family. With an intelligent patient, situated within call of a dozen competent surgeons on an hour's notice, such palliation is allowable; it would not be if the patient were in other circumstances. Altogether, I can record about a hundred cures of chronic inflammation of the appendix. Possibly half a dozen of these have subsequently been operated upon, either because they wished to be rid of all possibility of recurrence of trouble, or because a second attack due to the usual causes has occurred after an interval. Of course, one can no more guarantee against a second attack of inflammation of the appendix than of any other organ. Meanwhile every few weeks I see an acute case which is promptly referred to a surgeon.

The liver is unanimously considered as a digestive organ and it must be treated mainly in a round-about way by attention to the stomach and intestines, yet the principle must be kept firmly in mind that the liver is vastly more important as an organ of elimination than of digestion.

If the liver is to be considered as belonging to the gastro-enterologist, it is a logical conclusion that lithæmia, the so-called uric acid diathesis, gout, constitutional asthma—not hay fever—,constitutional eczema—not the forms due to direct chemic or bacterial irritation—, and the chronic conditions commonly called rheumatism—not the acute, infectious process—must also be included in the digestive specialty. Personally, I have never made an effort to secure such cases, simply because, on first thought, it seems far fetched to claim them, but it has been a surprise to observe how many patients, dissatisfied by the results of treatment based on other conceptions of these conditions, have themselves, worked out the theory that these troubles depend upon perversions of metabolism in which the digestive organs are primarily concerned.

Gout, including its manifestations as asthma, eczema, etc., seems to be a sub-oxidation disease, affecting nitrogenous matter. Similarly, true obesity and diabetes are, respectively, sub-oxidation diseases involving fats and carbohydrates. Diabetes is directly due to failure of the internal secretion of the pancreas, obesity is not yet connected with a definite lesion or failure of function. All three of these sub-oxidation diseases are closely imitated by relative failure of oxidation, due to excessive ingestion of the corresponding food stuffs. In regard to nitrogenous foods, it is impossible to draw a sharp line between sub-oxidation and superingestion. It is usually easy to distinguish between true diabetes and glycosuria and between fatness due to overeating and that depending upon essential failure of oxidizing power. This last distinction would be clearer if we had a different word from *obesity*, and, for this reason I have suggested the term *pinguidity* for fatness due to superingestion.

The classification of sub-oxidation diseases, suggests that there are superoxidation diseases as well. Superoxidation of nitrogenous matter corresponds to the condition of azoturia, which some French observers have reported as an independent condition. I have never recognized it except as a compensation for carbohydrate sub-oxidation, in diabetes, although I have seen it in diabetes after the sugar had disappeared from the urine. Excessive oxidation of fats results in leanness, and, perhaps, the same condition is due to superoxidation of carbohydrates as well.

Careful examination of the urine also frequently calls attention to the fact that the elimination of certain inorganic salts is excessive or deficient. All of these conditions of abnormal metabolism belong within the domain of gastro-enterology, partly because the management is largely dietetic, but even more, because the ultimate understanding of the pathology must depend upon careful study of physiologic chemistry whose very foundation is nutrition. Scurvy, certain anæmias, and disturbances of the ductless glands such as exophthalmic goitre, myxœdema, vague perversions of the thyroid function which have no name and are scarcely recognized, Addison's disease, etc., also belong in this category.

Parasitic diseases of the alimentary organs, whether of animal or vegetable origin, and the majority of cases in toxicology also have an important bearing on gastro-enterology, and, though most poisoning cases are treated by the residents of emergency hospitals, every gastro-enterologist should have an emergency outfit, including the principal antidotes and a large tube for the evacuation of poisons even when mixed with imperfectly masticated food. The ordinary stomach tube is absolutely worthless for this purpose.

A very important part of pædiatrics is gastro-enterology, indeed, the only reason for recognizing children's

diseases as a specialty, is that certain physicians cultivate an inborn ability to deal with children and make a special study of the physiology and anatomy of the period of bodily development. The prevalent idea that there is some mysterious skill in making a diagnosis without the history which an adult does and which an infant cannot give, is, of course, ridiculous from the professional standpoint. With certain rare exceptions, the physician who has to rely upon the statements of a patient, except as they save time in calling attention to some particular organ or region or in excluding some gross condition such as fracture, is obviously incompetent. Thus it often happens that the pædiatrist and the gastro-enterologist, often travel the same path, and, in the most friendly spirit, for the man who is not above petty jealousies ought not to practice medicine, and he would simply starve to death in a specialty.

Some of my readers may feel inclined to ask "Is there any medical or surgical condition that this man does not claim for gastro-enterology?" In the broad sense, it may be answered that there is no case, treated by any practitioner, which may not also call for the services of any specialist under certain complicating conditions. The gastro-enterologist must, as a matter of routine, see that his patients have necessary attention from a dentist, and I find myself almost daily, directing patients to the ophthalmologist, the laryngologist, the dermatologist, the surgeon, the gynæcologist and to the best specialist of all, their family doctor. It has been a matter of peculiar gratification, in view of certain extreme teachings, to note the considerable number of cases referred by ophthalmologists and gynæcologists who do not believe that every ill of human flesh can be set down as eye-strain and genital reflex. Indeed, while the millenium has not been reached, the old idea of hanging on to a patient as long as possible and then submitting with as much philosophy as possible to his loss, seems to have given place to a much more sensible and honorable sentiment that most seriously acute or obstinately chronic conditions require joint care from appropriate sources, and, in making this statement, I voice not only the observation of gastro-enterologists, but of the great majority of practitioners whose work comes to them mainly through their colleagues.

In one important particular, this sentiment has not developed so far as it ought, though the very fact that I am able to discuss it shows that a general incrimination of all concerned would be highly unjust. In this particular, it should be observed that gastro-enterology is concerned no more than neurology, pædiatrics, clinical chemistry and pathology and internal medicine. The surgeon should remember that his specialty is mainly operative, he should undertake no important operation without diagnostic consultation from the standpoint of internal medicine as related to the organs involved, nor without being sure that the blood, viscera and, especially the emunctories are normal, or have been put into as good condition as possible. Anæsthesia and the general condition of the patient should be under expert and authoritative care, during operation. Diet, especially when the ordinary means of feeding are prevented or are embarrassed by interference with the continuity of the alimentary canal or the abdominal wall and medical treatment proper, should be under the supervision of an internist.

It is a paradox that, after all, shows the truest conception of the function of a specialist; that the actual consultation and reference cases of any specialist are especially liable to be border-line cases—at least this is my personal experience. The routine examination of the abdomen, renders the gastro-enterologist especially liable to detect movable kidney, enlarged spleen and kidney, abdominal tumors and mechanic abnormalities generally, while routine examinations of another kind may lead to the diagnosis of abnormalities of the blood, urine, &c. On the other hand, the gastro-enterologist is quite frequently called to examine hearts, lungs, and other viscera, or their secretions and excretions, simply because he happens to use in his daily work, chemic and physical modes of examination, to a greater degree than most other specialists, and without reference to the possibility of a complication strictly involving his specialty. In this connection, there may be pointed out the genuine need of another specialty, clinical pathology, carried on by men who are neither devoting their attention mainly to abstract problems in science nor, on the other hand, to surgical or medical practice. Clinical pathology ought not to be merely a side line and it cannot be made a success either by the pure scientist nor by the recent graduate who frankly avows that he is using it simply as a stepping stone to practice.

Perhaps it may be well to conclude with a definite answer to the question, Is there anything not included in gastro-enterology? With the exception of certain animal parasites and the typhoid bacillus, which regularly locate in the alimentary tract, and the occasional location here of tuberculosis, syphilis, and the malignant neoplasms, practically all infectious processes, due to bacteria, fungi, animal parasites or undemonstrated but supposed living causes are entirely without the domain of gastro-enterology. These amount to about 45 per cent. of all fatal cases and, probably to a considerably higher percentage of medical practice. About 12 per cent. more of deaths due to extrinsic causes are also excluded. Obstetrics and all but abdominal surgery, diseases of the special sense organs, dentistry, primary respiratory conditions and strictly nervous phenomena including many inflammatory, parasitic and degenerative conditions are also to be excluded, unless special complications or need of careful supervision of diet arises. Diseases of the heart, vessels, blood, lymphatic apparatus and kidneys, are very prone to establish vicious circles with the digestive organs, and, conjointly with the lungs. Here, and in general, the assortment of diseases is difficult on lines of gross anatomy. In each case, the question should be raised, is there a lesion or a complicating process pertinent to the specialty? Usually the answer is easy, sometimes some study of the case is needed or the condition may be so complicated that whoever first sees the case, may feel justified in attacking it from his own standpoint, and in consulting subsequently with whomever may be needed to clear up some particular problem. In the long run, it is easy to decide whether any given practitioner is acting in good or in bad faith. It would be acting in bad faith for me to sew up a lip, or treat a pharyngitis or fill a tooth, because these organs are part of the alimentary apparatus, or to take an obstetric case, because there was an abdominal tumor. On the other hand, I am frequently called by the best arbiters of the matter, the general practitioners, to differentiate pregnancy from various digestive disturbances or abdominal tumors and to study various problems in connexion with circulation and elimination.

THE ETIOLOGICAL FACTORS IN CHOLELITHIASIS.

BY MARSHALL ORLANDO TERRY, M. D., UTICA, N. Y.

THE etiological factors in cholelithiasis we might say are numberless, for the gall bladder is a reservoir which holds the products of the blood and any disarrangement of any organ in the body, any chronic disease existing, any deviation from normal physiology must have a bearing on the production ultimately of gall stones. It would not be advantageous, interesting or instructive, therefore, to enumerate or enter into detail regarding a subject, which has so many ramifications and complications, with the innumerable diseases with which mankind is afflicted.

If I were to displease the ladies—which is always a great pleasure to me—I would state that sedentary habits and tight lacing are favorable to the formation of the calculi by interfering with the flow of the bile. The displacement of any organ, as a movable liver or the right kidney, produces the same effect. Fat people are observed to be more frequently affected than the lean.

In rare instances, it is said, foreign bodies, such as seeds, parasites, mercury, a needle and clotted blood, have been found in the center of a gall stone. Diseases of the heart, especially mitral stenosis, are causes which contribute to this difficulty. It is stated that persons liable to catarrh of the mucous membrane are prone to this affection, and those having inflammation of the stomach and duodenum. Exposure to cold, dampness, the sudden checking of perspiration; errors in diet, as overeating, ingestion of rich or fatty food; as well as the use of certain drugs and stimulants frequently cause this disease. A debauch is often followed by an attack and the inhalation of noxious vapors and vile gases have been known to excite it. The co-called epidemic jaundice is thought to be due to a poison from without to the food, drink or air. Tumors in the abdominal cavity, or the enlargement of organs interfering with the portal circulation; phosphorus poisoning as well as lead; and various fevers, such as cholera, typhus and typhoid, are factors in the production of gall stones.

The above is a sample of what the books say and what my stenographer records as the principal causes of this direful malady. I think, however, it can be summed up and simplified and I will try to impress it upon you by a different line of thought, which will not be taken from books, but will be in line with physiological life.

It is supposed, of course, that we all know that about seventeen ounces of bile are secreted per day; that there is some difference between the contents of the blood stream in a hepatic vein and that in a portal vein. The hepatic vein contains more sugar, cholesterin and blood corpuscles and less albumen, fibrin, free hæmoglobin, fats, water and salts. The coloring matter of the bile is principally the result of wornout blood corpuscles.

Now, what are the functions of the bile? Is it not the emulsification of fats, the lubrication of the walls of the intestines and does it not increase the osmotic power of the wall of the gut in order to facilitate the absorption of fats. It prevents, also, to a considerable extent decomposition and stimulates perisstaltic action.

What becomes of the bile? All physiologists know that a portion of it passes out with the feces and part is absorbed and eliminated as urobilin. The cholestrin is given off with the feces and the bile salts are mostly reabsorbed by the gut.

Man has never constructed so complicated a machine as that which constitutes the individual man, but it needs the care of the most delicately constructed watch in order to preserve the free movements of all its intricate parts. Therefore, it is a question of diet, it is a question of exercise, it is a question of following the requirements of physiological life in order to preserve this wonderful machine in the fullness of its perfect operation.

The foundation of the majority of most organic diseases, I believe, has its origin in errors of diet, lack of proper exercise and in the neglect of the bowels and the last will receive careful attention. I hope I shall make myself so thoroughly understood that not one will forget the importance of this line of thought. If I can make this so impressive that the kind mother, with her large family, will give herself that regular attention which nature requires (rather than to allow everything else to take its place and then expect nature to adjust itself) and adopt a selected hour, one of the most important suggestions in reference to the cause or causes contributing to gall stones formation will have been accomplished.

The effects of microbic action in the formation of gall stones has not been touched upon. A stasis in the intestinal tract of twenty-four hours will result in the reabsorption of noxious gases, the retention and distribution of various forms of microscopical life often will be the commencement of organic changes set up in some part of the tract which has to do with the digestive organs. Once the deterioration or imperfect action of an organ begins, slowly in some cases and rapidly in others, degenerative changes ensue. From hyperæmia to congestion, thickening or hardening succeeding, the formation of tumors or the destruction of the mucous membrane or normal epithelium but imperfectly bring to your minds complications which means the destruction of a life. If it happens to be the gall bladder that is the center of morbid action, whether microbic, the filtrations of badly digested blood or acid poisons, as I have stated by neglect of physiological action, the case is then presented to the surgeon for his consideration.

A distinguished oculist said to me many years ago that he thought a doctor should practice for ten years at least in a general way before taking up a specialty. The ambitious student in college with his post-graduate experience in surgery often wishes to enter at once without this experience into the mechanical part of the profession.

It has been noted, while observing surgeons in various parts of the country, for years this utter lack of taking into consideration the etiological factor of the diseases upon which they are called to operate, and it has been further noted that the patients are usually sent away without being instructed as to the causes leading up to the difficulties in question in order to prevent a recurrence.

No one more fully appreciates the deft hand of the skilled than myself; it means hard work to be clever with the knife; it requires a cool head and a steady hand to perform a desperate and dangerous operation; for the life of the patient often hangs upon the procedure. He may live for years without the knife—in misery, to be sure—or his career may be terminated within the short time he is in the surgery. It is well, therefore, to consider the question as to how many we can save from

the surgeon's knife. It is not for me to lay down the law of diet, of exercise and of the proper time to attend to the requirements of this wonderful machine, but everything pertaining to the care of the body should be done with the regularity of a reliable time piece. This is especially true in regard to the bowels and plain language must be used in relation to this subject.

We have referred to the action of bile on the intestinal tract; of its soapy effect, we might say, or lubricating effect. If, however, you pass the expected time of attention to the bowels reabsorption of the various lubricating elements takes place to a large extent and what is the result? Yellow skin, poisoned organs, debility, lack of energy, loss of nerve power, headache, backache, et cetera. In fact, everything the reverse of what the healthy man should enjoy. We have, in other words, a case of auto-infection or auto-poisoning, the germs of which are found from the mouth to the end of the intestinal canal. They are comparatively innocent if caused to move along. Possibly they may be a stimulant, but if arrested in their movement they are like a stagnant pool and have a similar effect upon the human organism. Their movement means life, but arrest of the same death.

Again, can we avoid gall bladder diseases? The well man, of course, may step into the street and break his leg and so we are liable to diseases of all sorts, but laying aside the misfortunes of the inroads of the various diseases, which may overtake us, how can we prevent the disease under consideration and other diseases intimately associated with gall bladder difficulties, for this is only one of many others connected with digestive derangements.

The drinking freely of pure water. The avoiding of coffee, if it disagrees with you, makes the skin yellow, causes vertigo, or makes you conscious that you have a heart. Simplicity at a given meal, but a variety from meal to meal, the character of the diet to be governed by your own peculiarities, or by the physical or mental work in hand. The morning bath; the hot bath to remove from the skin uric acid and other poisonous accumulations. Deep breathing to help you to oxygenate your blood. Exercises adapted to yourself and not those suggested by others and particularly exercise appropriate to your age. You may not be able to ride a bicycle or play lawn tennis or golf, but you may be able to walk or ride a horse. But if not any of these there is the free exercise in the morning at the time of your bath, which requires no paraphernalia whatever to put into healthy condition the muscles which are the protectors of your vicera as well as the guardians of your health.

Sufficient has been said in regard to the etiological factors of gall stones, although possibly nothing has been suggested which is new, but it frequently happens that when we are told what we have often thought it puts us on the road that we had really mapped out for ourselves.

In closing let me suggest that although my subject, the etiological factors in cholelithiasis is at the head of this chair let me plead with the surgeon to ever bear in mind to take the pains to assist his patient by instructing him in the line of thought herein suggested, namely, "How can gall stone diseases be prevented?" Why, by following out the physiology of life taught in our schools, taught in our colleges, but sadly neglected by most of us.

PRACTICAL POINTS TO BE EMPHASIZED.

BY WM. WORMLEY, M. D.

ALTHOUGH the term is rather loosely used, there are still a large number of cases to which the expression "cardiac failure" undoubtedly applies; the organic lesions most commonly associated with it are degenerative changes in the muscular walls, aortic disease, and disease of the coronary arteries, yet it has been observed in cases where no gross structural lesions could be found. Sudden stoppage of the heart is usually assumed to "take the form of quiescent standstill in a state of diastole," but a long series of experiments which the author has carried out on the mammalian heart has convinced him that such a mode of failure is very exceptional, if we exclude the action of such causes as chloroform narcosis, asphyxia and hemorrhage. There are usually seen in heart failure in animals, violent, irregular, incoordinated manifestations of ventricles, which are in a state of diastole. In the course ished and the ventricles exhibit a rapid, quivering, twitching action, and become distended with blood. The muscular action is arhythmic, some of the muscular bundles being contracted while others are relaxed, and, consequently, blood can scarcely be expelled from the ventricals, which are in a state of diastole. In the course of his experiments, one authority was repeatedly impressed with the ease with which this condition, one of whose titles is "delirium cordis," is produced. Indeed, it will frequently develop of its own accord, after the animal's thorax has been tied.

Von Herfel believes that the majority of the intra-ovarian nerves are distributed to the blood vessels, their number being so great that they actually constitute an essential part of the ovarian stroma. They form a dense network, but do not anastomose freely, and supply the capillaries as well as the vessels with muscular coats. In the latter the terminal fibrillæ are in intimate relation with the muscle cells. Only a few nerve fibres end in the muscle cells of the hilus or between the cells of the green epithelium. The writer has demonstrated the existence of follicular nerve fibres, which enter the largest follicles, ending in the membrana granulosa, but only surround the smallest follicles. Further investigation is necessary in order to determine if these nerves also penetrate the cumulus proligerus. Individual nerve fibres can be traced to the germ epithelia, to the muscle cells of the hilus, and to the inner vascular area. The presence of ganglion cells has not yet been positively demonstrated, though their existence in the hilus is regarded by the writer as highly probable.

The unusual coincidence of normal and ectopic pregnancy has been reported by Worrall. The patient was a multipara who was awakened at night by severe abdominal pain, followed by slight hemorrhage; she recovered her health, the abdomen enlarged, and she was told that she was pregnant; the tumor gradually decreased in size and menstruation returned; when examined, the abdominal tumor was found composed of two parts, one the uterus with a living fœtus, the other, probably, an ectopic fœtus. Upon laparotomy, a dead fœtus was found in the abdomen, which had developed in the posterior layer of the broad ligament; it was removed and the sac stitched to the abdominal incision. The next day labor came on and the intra-uterine fœtus was delivered; the patient recovered, the sac being drained and irrigated by an antiseptic fluid. The case

is of an especial interest, as one in which intra and extra-uterine pregnancy occurred concurrently.

Lemke believes in intra-pleural injection of nitrogen in the treatment of pulmonary tuberculosis on the rational that fibroid changes develop which assist nature in the healing of the tubercle, following compression of the lungs (*Boston Medical and Surgical Journal*, Jan. 17, 1901). Even cavities are compressed by this method, and healing is favored. The pleural adhesions, which follow this treatment, Lemke states, are less than might be expected, the risk of the operation is slight, and he has determined that the healthy portion of the lung may expand again, on the removal of the intra-pleural pressure even after long compression. He believes that this treatment is curative in some cases, and palliative in others. Lemke also suggests that this treatment is valuable when the pleural cavity is to be opened for surgical operation.

Marian, in answer to the question "What shall the general practitioner do when confronted with a foreign body in the ear?" says: The first thing to be done is to convince himself that a foreign body is really in the ear; also whether it is really in the ear the patient says contains it. It has happened that the patient, in his excitement, presented the wrong ear for treatment. If, now, the foreign body being present in the ear, any instrument is inserted, without the proper illumination of the ear, not only will the patient suffer pain, but he runs a great risk of receiving an injury to his membrana tympani. After having diagnosticated the presence of a foreign body with the aid of a mirror, the next step is to determine its position, whether it lies in the meatus, the isthmus, or agaist the membrana in the fundus of the auditory canal. Then the employment of a moderately strong syringing with warm water will usually dislodge and bring out the foreign substance, if it is not wedged tight. "In all cases, however, in which the general practitioner is unable to determine accurately the precise situation of the foreign body, or in which the foreign substance is imbedded or wedged in the canal, or when the latter has been irritated, wounded and swollen, through previous unskillful attempts at extraction, the advice is given out never to attempt syringing the ear, but to call in the service of an aurist. Because it now becomes necessary to adopt a treatment which no general practitioner of medicine is able to carry out."

There are certain essential differences in the symptoms of influenza, as it appears in children from that form which is seen in adults. With children fever and cerebral symptoms at the beginning of the disease are of primary significance. Rudimentary forms may be manifested by general malaise, lassitude, want of activity, and disinclination to play. In well-developed cases the disease usually begins abruptly the same as in adults, but instead of well-marked chills there are usually only chilly feelings alternating with feelings of heat. The chilliness may be accompanied with convulsions, and the latter be succeeded by drowsiness which may last twenty-four hours more. When very young children have this disease they are apt to be fretful and complain whenever any change is made in their position. Older children complain of pains in the head, the lumbar region and the limbs, and there may also be intense mental dullness, which may extend to loss of consciousness. Other symptoms are loss of appetite, paroxysms of cough, vomiting or diarrhœa. In grave cases death may occur within forty-eight hours. In the majority of cases the pathological process is limited to the mucous membranes, the respiratory passages being first attacked, after which may follow conjunctivitis, epiphora, difficulty in deglutition, deafness, and possibly cough, In very young children there may be dyspnœa of an alarming character. There is usually swelling of the cervical ganglia.

The addition of one part of the peroxid of hydrogen to one thousand of ordinary drinking water containing typhoid bacillus or cholera bacillus, is quite sufficient to destroy the various saprophytic and pathogenic organisms contained under these conditions, if it is obtained perfectly fresh and kept in good condition, and if it is allowed to act for a period of twenty-four hours. It is especially valuable for the disinfection of drinking water, because it does not affect the taste, does not alter the color, and in the proportion mentioned is perfectly innocuous. As regards cost, Altehoefer calculates that sufficient drinking water, say two gallons and a half, for a family may be sterilized by means of peroxid of hydrogen at a cost of about five cents per diem.

Gibson published an analysis of 1,000 consecutive cases of primary sciatica observed at the Devonshire Hospital, Buxton, with the following results: "I find that 884, or 88.4 per cent. occurred in males, and 116, or 11.6 per cent. in females—a proportion of nearly 8 to 1. With regard to the side affected, 443, or 44.3 per cent., had the affection on the right side, 483, or 48.3 per cent. on the left side, and 74, or 7.4 per cent., had both sides affected. As to the age when the affection first commenced, 14, or 1.4 per cent., contracted the disease between the ages of fifteen and twenty; 159, or 15.9 per cent., between the ages of twenty-one and thirty; 310, or 31 per cent., between the ages of thirty-one and forty; 248, or 24.8 per cent., between the ages of forty-one and fifty; 187, or 18.7 per cent., between the ages of fifty-one and sixty; 71, or 7.1 per cent., between the ages of sixty-one and eighty. In 132 or 13.2 per cent., there was accompanying lumbago, and 123, or 12.3 per cent., followed the occupation of mining. The percentage of cases with lumbago is probably too low. These statistics show that 55 per cent., or more than half the cases, occurred during the prime of life. This fact shows a marked contrast to rheumatoid arthritis of the hip-joint, which so often gives rise to secondary sciatica.

Realizing the importance of a proper diet in fever and that this depends on our knowledge of the capability of the stomach to digest in febrile affections, Wolfrem made some studies on the nature of the gastric secretion in this condition. After reviewing some of the experiments which have been published by others, and giving tabular statements of some cases, which numbered fifteen in all, he concludes that as far, at least, as any deductions can be made from so small a number of cases, they should be divided into two groups. In the first, the acute infectious diseases, the gastric secretion contained no HCL, except at the terminal stage of typhoid fever. It also possessed no power of digestion, either within or outside of the organism; though on the addition of acid it artificially digested quite well, thus proving that the fault did not lie in the absence of pepsin. With the cessation of fever, or a little later, the digestive power returned. In the second group, the chronic febrile diseases, the digestive strength remained normal even during the course of the disease. It would seem, therefore, probable that it is not the elevation of temperature as much as the nature of the

infection which influences the nature of the gastric-secretion. Even more true is it that digestive power is normal in the non-infectious diseases, and wanting in those of an infectious nature. It is evident, therefore, that the treatment should consist in the administration of HCL; and that forced feeding may be employed in chronic cases, with the hope that digestion will take place.

The result of his investigations were as follows:

1. The production of hydrochloric acid was in all the cases not diminished in the morning, and in some of them even increased. There was a normal production of acid both in the advanced cases and in those with the morning fever.

2. The digestive power of the gastric contents was destroyed in no case; the length of time required in the digestion test was one to two hours, and corresponded with the normal condition.

3. The time required for digestion within the stomach in the afternoon and evening hours was not prolonged, and there existed consequently no motor insufficiency in the cases examined; for in all but three of the cases the stomach was empty after six hours, and in these there was no food remaining, but only some of the gastric secretions. The degree of advancement of the disease, or the elevation of the body temperature, appeared to have no influence.

It seems certain, then, that the so-called gastric disturbances of many phthisical patients do not always depend on gastric catarrh and a diminution of the secretions. It is of importance, therefore, to make in every case possible an examination of the secretion, in order to be able to determine the most suitable therapy Cases in which the secretion is found normal are often suitable subjects for gavage, and will be benefited by it.

Studying the etiology of mental disease, we have been taught by our text books to refer to the predisposing and exciting causes. A sharp distinction between them is not always possible; the former must be considered under the head of general, special, or individual causes.

Among the general predisposing causes are to be found civilization with its increased anxieties, responsibilities and excesses in the use of alcohol, tobacco and coffee, which must be looked upon as an important factor, while race and climate seem to have little influence in its production. The frequency of insanity is about equal in both sexes; the special causes, such as pregnancy, the puerperal and climacteric periods in women, being offset by the greater strain of overwork, and alcoholic and sexual excesses in men. Religion acts as a preventive rather than a causative agent in insanity, and this applies to all the great religions.

Up to the age of puberty, insantiy is rare. In the majority of such cases, we have to do with those congenitally affected, as in idiocy, intellectual and moral or in connection with the neuroses—epilepsy and chorea. Onanism, the infectious diseases, injuries, fright, and bad training are all important factors. With puberty the percentage increases, and here heredity is of great importance. The strain upon the system at this period is its cause. The greater percentage of insanities occurs in women between the ages of twenty and thiry-five, and in men between thirty-five and fifty-five, the reason being at these periods the causes of anxiety, etc., increase. The climacteric period in both men and women again increases the percentage. In old age the percentage once more decreases. Certain occupations have a predisposing influence, as among soldiers, sailors, governesses, prostitutes, and prisoners. Heredity is of the greatest importance, although it is rare for the same form of the disease to be directly transmitted, except in certain tendencies to suicide.

Under the head of exciting causes we may include fright (usually, however, though not necessarily, there is an hereditary influence in these cases); worry or depressing causes, loss of money or relatives, etc.; brain diseases, as meningitis, through disturbance of the nutrition of the brain; subacute tubercular meningitis, which in adults often proceeds as a psychosis without fever; pachymeningitis hæmorrhagica. Local diseases—for example, cerebral hemorrhage, cerebral softening, multiple sclerosis, tumors—usually cause dementia and paralysis. Injuries—concussion—and tabes are often accompanied by differenet forms of insanity, as melancholia, general paresis. Injuries to nerves (usually in the epileptic or hysterical cases) and typhus, pneumonia, anæmia, and phthisis may all act directly as causes.

Egotism is a marked feature in all forms of insanity where dementia has not destroyed action. Here, however, the succession of ideas is slow, the prevailing one being that he has done some wrong act for which he deserves punishment, though what it is he does not know. This fixity of idea excludes all other ideas; such a patient cannot put his attention on any other subject, and the patient remains oblivious to all his surroundings. Delusions are present, and usually of a condemnatory character. Weariness from the constant presence of one idea leads to tedium vitæ, and a tendency to suicide or, more rarely, to homicide. With dementia already present in this case, the prognosis is bad. Here it is that the regular routine of the asylum is beneficial, the nutrition being carried as high as possible. Forced feeding is at times necessary, as the demands of nature are often entirely ignored, either on account of loss of appreciation of the feeling of hunger or on account of some delusion.

I will describe a case of general paresis; the patient was healthy until three years ago. He now presents the physical signs of the disease with few or none of the mental symptoms. He has been a clerk, and when I ask him whether he considers himself capable of performing his old work, he answers in the affirmative, but with so much difficulty of articulation as should convince him of his incapacity. This persistent belief in himself is the chief or only sign of mental weakness. When we examine him for physical signs, we find that the pupils are unequal. There is tremor of the muscles of the face and tongue, and a flatness or lack of facial expression. This is characteristic of general paresis, although not combined to it, being found also in other forms of chronic insanity. He is twenty-nine years of age, the period at which general paresis occurs as a disease of early life. There is no tremor the hands, but some instability of gait. The physical signs, then, are well marked; there is probably some degeneration of the cord.

General paresis is a disease of comparatively early adult life, occurring most frequently between the ages of thirty and sixty, although many cases occur under thirty, a number having been under my personal observation, and some have been reported at the age of fifteen and even younger. Heredity is an important factor, although direct transmittance of the disease is not as common as it is proceeding from various other cerebral affections. There is much difference of opinion in re-

gard to the proportion of males and females who are affected. Mickle places it at four to one in favor of females. The exciting causes are alcoholic and sexual excesses, sunstroke, worry, anxiety, mental and physical strain, overwork, cerebral injuries, concussions, and syphilis. Of late the last cause has probably been overestimated. It seems to affect the lower classes with as great frequency as the higher or more intellectual. In our classification we have placed general paresis under the head of organic disease, with definite pathological lesions. We find post mortem, on inspection, the skull usually thickened, more rarely thinner than normal; the dura mater thickened, often the seat of hæmatoma, and the pia mater adherent to the cortex, its removal causing slight loss of substance, giving the brain a worm-eaten appearance. The vessels are thickened, and in early cases there is often hypertrophy of the cerebral substance, but in chronic cases atrophy. The ventricles are dilated, and their surface rough and granular. Similar conditions can be found throughout the brain and basal ganglia, as well as in the medulla and cord, the white columns and the cornua, with the meninges, being involved. hanges are also observed in the cranial and spinal nerves. Microscopically we find disease of the arterioles and capillaries; their walls become thickened and often obliterated, and the seat of small aneurisms. The neuroglia is increased and Deiter's cells become abundant. The late contraction of the connective tissue may be the cause of the cerebral atrophy, or it may form part of the general condition. The nerve-cells in the early stage may be hypertrophied; later they become atrophied, losing their processes. There is also atrophy of the nerve fibres. Degeneration changes are present in the basal ganglia and the neuclei of the cranial nerves, especially the facial, hypoglossal, and motor oculi, as well as in the nerves themselves, including the optic. In the spinal cord the lateral and posterior columns are the seat of inflammatory changes, or of sclerosis, and the membranes are adherent. This may be diffuse, transverse, or disseminated. The cells in the anterior horns are in certain cases atrophied.

The symptoms of general paresis manifest themselves at first by restlessness and insomnia; the patient becomes irritable and impatient, and, in many cases, irregular in his habits, addicted to drink and excessive venery. At times, though, in my experience rarely, a period of depression may precede that of excitement, which is marked by extravagant ideas and the formation of innumerable plans calculated to make a great fortune or to reform the world. The patient imagines himself possessed of great powers, and, therefore, thinks himself either very wealthy or some great personage. This may be gradual in its onset, taking months, or years, during which time his friends may not suspect it. Sooner or later, however, he becomes forgetful of business appointments, without, however, any concern about the matter; in fact, a general condition of well-being seems to pervade him. Physical signs accompany this mental state, and among the earliest symptoms is a tremor of the face and tongue, with disturbance of articulation; the pupils are contracted or unequal, and respond but slowly to light and accommodation. There may be ophthalmaplegia externa, or ptosis, often of a transient form. The face assumes a blank fatuous expression. While most patients, even in the advanced stage of the disease, are contented and fully convinced that they are as able to do business as ever, some more or less realize their condition, in the early stage at least, and are depressed and suicidal. Locomotor ataxia or lateral sclerosis is present in many cases. The progressive paresis is present with more or less marked atrophy, until the patient becomes bedridden. Epileptic seizures or apoplexies occur with hemiplegia, often, however, of transient character. Sensory disturbances are not, as a rule, marked. Periods of maniacal excitement occur from time to time, leaving the patient more and more demented, with little regard for or interest in his family or surroundings. However, even at this period he may possess his delusions of wealth and well-being.

The course of the disease is about three years, although in some instances extending to five or even nine years, as in a case under my care. The physical symptoms in some cases predominate, and in others the mental. The prognosis is bad, death being the outcome, although remissions occurring in some cases have given rise to assertions of recovery.

From the foregoing it will be seen that treatment can only be of a character to relieve or mitigate the course of the disease. Asylum treatment is of the greatest advantage. The periods of excitement are better controlled by drugs than by restraint. Hyoscyamin at these periods is the most effective.

In the so-called "insane ear," there is an acute extravasation of blood and serum into the cartilage of the ear, which goes on to atrophy, when the ear takes on a peculiar shrunken appearance. It has been questioned whether there is really such a thing as the "insane ear," as boxers and others likely to receive blows are also subject to the affection. The insane are more or less likely to suffer from blows. The man with a delusion is very apt to hit his neighbor. Insane patients are also often restless in bed, and may injure themselves in that way. On the other hand, it is strange that there should be so many of these cases of haematoma auris among the insane, and we should remember that the insane are very apt to take on appearances of maltreatment.

In some cases of general paresis the bones break easily. Other conditions might be named, and it is not unusual to hear complaints on the part of friends of such patients of their being maltreated by nurses, of ribs fractured, or arms broken. The real cause of this is a disease of the bone found especially in general paresis, and cases have been reported in which on being exhumed more fractures of various bones were found than at the time of burial, thus disproving the charge of abuse while in hospital.

Weir sums up his ideas upon the subject of resection of the appendix vermiformis during the quiescent stage of chronic relapsing appendicitis as follows:

1. That the final outcome of the review of these cases has been that the large majority of recurrent attacks are due to catarrhal appendicitis, which, though to an unknown degree capable of producing explosive and serious peritoneal inflammation, yet generally, from the lumen of the tube being previously shut off from the caecum, limits correspondingly the chances of fecal or severe infection of the peritoneum.

2. That the simple catarrhal appendicitis can be suspected when the recurrences are frequent—that is to say, more than four or five times, as in the acute processes this is seldom exceeded—and when such attacks are not of a severe type, nor of greater duration than a week, and particularly so if there be no appearance of a distinct tumor.

3. In such cases delay in operating may be encour-

aged to a reasonable extent, at least until it is undubitably proven that the invalidism is a confirmed one. Out of five cases seen by Weir in the last year for recurrent attacks of appendicitis, in three, of the above described simple form, it was advised to wait until the next acute attack presented itself as a further justification of surgical interference; but this did not occur in any of these cases.

Furbringer from careful observations in a series of twenty-five cases, established the following relations between siphon action and aspiration (suction) in removing fluid from the chest—first allowing what would run off by siphon action and then determining the amount that could be got beyond this by aspiration (in all cases no forced exhaustion was used, and the total amounts obtained were only moderate—Furbringer is no believer in strong suction nor does his instrument admit of it).

In all cases the quantity secondarily removed by suction was less than one-tenth of the whole amount. In 10 cases from one-tenth to one-third of the whole amount. In four cases from one-third to the whole amount.

Thus, on an average, in 10 per cent. of the cases the siphon fails to remove one-half the exudation, and in some of the cases the main part cannot be obtained except by aspiration. In one of the cases the siphon obtained none, but aspiration ʒxvij. On the other hand, in two cases of ʒixx and ʒxxx, the siphon exhausted the whole.

Of 70 cases, in which the combined method was used, two-thirds left the hospital without its repetition being necessary, in 10 of the remainder needing a second removal, Furbringer tried siphonage alone, and found six of them so tedious that even the attendants remarked their long stay, and repeated operations were necessary in these six. Furbringer's conclusion is that in a considerable number of cases, suction (aspiration) is a factor in healing, to neglect which is a "sin of omission."

Furbringer has constructed an instrument which allows both siphonage and the vacuum. It is on the principle of the ordinary wash-bottle of the laboratory. The long glass tube is connected with the trocar by a yard long piece of rubber tubing. The operator uses another piece of tubing fastened to the short tube through which to suck. Three ounces of an antiseptic fluid are first drawn into the flask. After the trocar has been plunged in and the bottle connected with the canula, slight suction with the mouth exhausts the air in the tube between bottle and canula, so that on turning the cock of the canula the fluid flows by siphon action. After this ceases a little suction by the mouth establishes a vacuum sufficient to re-establish the flow.

ECZEMA AND ERYTHEMA AS SEEN BY THE GENERAL PRACTITIONER.

BY M. MCCRORY, M.D.

TO divide the causes of the skin diseases into constitutional and local is undoubtedly the most natural method of classification. If the tendency is toward health, morbid influences can be resisted if not too powerful; if toward disease, a slight cause will excite it. The tendency depending on period of life is functional largely, while that irrespective of age shows itself as an hereditary or acquired tendency is undoubtedly structural in character. To show the force of these points we can see that the eczema of youth, with a skin highly sensitive, of much functional activity is of one type, while the eczema of declining vitality presents a moist and extensive eruption at first, which subsequently tends to become dry and scaly.

The so-called relapsing moist eczemas in middle-aged women, a troublesome condition, usually show no connection to the gouty or other known diathesis. The eruption is noticed in women of a full habit wherever are seen heat, moisture and friction. A first moist it may extend over a large area varying greatly from time to time, aggravated by over-indulgence at table or mental irritation. Under appropriate treatment the disease becomes drier, but quickly breaks out again unless the original causes can be removed. Warm sulphur waters are especially effective in such conditions.

Eczema associated with gout is difficult to treat. It differs from the preceding form of cases in the fact that other symptoms of gout existed in the patient himself, whereas in women mentioned above we must usually look to the family history. In these cases some manifestation of gout alternates with the skin disease frequently. An illustrative case was that of a man of 50 suffering with eczema of two months' standing, and affecting the smaller joints of the hands and feet, especially around the fingers, with scattering patches on the face. It consisted of papules on a livid, swollen skin, some suppurating and some vesicular.

It is well to remember that rheumatic eczema is moist and crusty, while gouty eczema is dry, pityriasis-like and itchy, and yet these differential signs cannot be depended upon. A better test would be the presence or absence of uric acid in the blood or in the urine.

Lawrence reports a case of chronic eczema of the fingers, when "all other treatment had failed," where he employed a solution of ten grains of permanganate of potassium to the ounce of water, applied freely with a camel's hair brush. The disease disappeared in twelve days. Two other cases, one an infant, did equally well under this treatment. Again prompt and complete cures of eight cases of chronic eczema from the use of a solution of a drachm of resorcin in an ounce of glycerine applied with a camel's hair brush morning and evening have been reported.

Eczema of the palms of the hands doctored in vain for three years was treated with salicylic plaster muslin continued for rather more than three weeks until the palms had become tender presenting a pinkish hue. They were then treated with equal parts of lead-plaster and vaseline, the hands dipped in hot water each time the ointment was applied. A cure was effected in six weeks time.

A French writer recommends a solution of chlorate of potassium ten grains, wine of opium fifteen minims in an ounce of water, applied on lint This formula probably owes most of its virtues to the water, but its vitality is remarkable, so that there may be more value in it than appears at first sight. Acute cases should not use this.

Blistering over the back of the neck and spine for

the relief of certain cases of eczema has been tried by Brooke, who reports the case of a man of 28 who had been troubled for many months with repeated attacks of papular and vesicular eczema of the backs of the fingers and hands, occasionally extending to the backs of the forearms and almost always involving the right eyebrow at the same time. The idea naturally suggested itself that either a trophic or vaso-motor centre in the cord was in an unhealthy state of irritation, and with the intention of relieving this condition Brooke applied some blistering fluid to the nape of the neck. The relief was very marked at the time, but the attack returned later and the patient was not able to have a blister reapplied. A second case exactly similar was quickly relieved in the same way. In a third case, that of a middle-aged otherwise healthy man, who had long suffered from outbreaks of papular eczema on the arms and legs and whose occupation forbade the employment of a blister, Brooke ordered mustard paste to be rubbed down the spine with fairly good effect. Brooke recognizes the danger of applying blisters in any case of eczema when the disease is not evidently limited. It is often easy to light up a new patch of disease by such treatment."

In eczema at the menopause the following prescription is good: R Sodii arseniat., 3-4; aquae d still., iv-℥fj. ℥M. Sig.—℥fij ter in die, while constipation should be relieved by a saline purgative, generally citrate of magnesia taken twice weekly. An application of the following ointment laid on gently should be made every evening: R Hydrarg. precip. alb., gr. xv; vaseline, ℥v; ess. rosarum, mij.

Hebra undoubtedly was wrong in attempting to consider erythema under two heads, "hyperaemic and exudative" for it is impossible that the first condition should exist without the latter being more or less present. Polotebnoff has given us no less than thirteen distinct classes of causes of erythema. "I. Salt provisions fish, fat, alcohol, excess, cold beverages, fatigue, exposure to cold and sudden changes of temperature are enumerated as causative especially among the older authors. 2. Weakly females especially at the menstrual period are said to be occasionally subject to erythema. Chlorosis is also mentioned as a cause. Although it is an effect rather than a cause, but chlorosis and erythema may co-exist. 3. Since Willian's extreme changes of temperature and also change of season have been reckoned among the etiological factors in erythema. All authors agree that erythema is more frequent in the seasons of spring and autumn. Some recent authors consider atmospheric and atmospheric-telluric influences as having weight. 4. Menstruation has undoubtedly a marked influence upon the production of erythema, while other varied perturbations of the female gental apparatus, as abnormal development of a tumor in the uterus, pregnancy, labor, etc., may act as etiological factors. 5. Willian first suggested cystolithiasis and irritation or inflammation of the bladder and urethra as causes of erythema, but later writers ignored these until comparatively recent times, when these etiological factors have been again brought forward, while at present disturbances of the genitouriny apparatus in both sexes, and especially blenorrhagia and vaginitis, are recognized causes. 6. Among chronic diseases which have been regarded as causative may be mentioned chronic nephritis, Bright's disease, and other affections of the kidneys. How these affections can cause erythema we do not know, but Polotebnoff thinks that irritation of the urinary nerve centres may account for it. 7. Icterus and cirrhosis of the liver are known to have occurred in connection with erythema. 8. Tuberculosis has been regarded by a number of writers as among the causes of erythema, and our evidence on this matter is quite strong. 9. Whether or not ordinary rheumatism can be regarded as a cause of erythema is still a vexed question. There is strong evidence in favor of this view, but on the other hand, some of the so-called "rheumatic pains" attending outbreaks of erythema seem to lack characteristic symptoms of that disease. It may perhaps be safely asserted that acute articular rheumatism, as in all probability infectious process may be a cause of erythema. 10. Syphilis has been considered as a cause of erythema by Hebra and others. 11. A pyaemic erythema has been described by Neumann. 12. The vaso-motor nerve has been supposed by Wilson and others to play an important part in the causation of erythema; Schwimmer is disposed to make this affection depend in a great measure upon lesions or affections of the brain and spinal cord. Polotebnoff, however, considers this unproved. 13. The last factor in the causation of erythema is local irritation, such as is produced by rubbing tincture of iodine or unguentum hydrargari into the cuticle."

Systematizing this classification there are four principal varieties of erythema. 1. That depending upon external irritation. 2. Reflex erythema; a, dependent upon external irritation of the skin; b, dependent upon external irritation of some organ, as for example the genito-urinary tract, liver, gastro-intestinal mucous membrane. 3. Central erythema resulting from irritation of the brain centres. 4. Infectious erythema, appearing in the course of infectious diseases, yet it must be acknowledged that all cases of erythema can not be classified under these divisions. The Vienna school considers erythema multiforme as of known etiology, while Lewi divides them into simple and malignant, regarding the great number as independent infectious diseases, while Auspitze classifies them as idiopathic angioneuroses of the skin.

The prodromal period of erythema frequent shows that the eruption may be preceded occasionally by mild symptoms or at other times by severe symptoms. The least variable prodromal symptom is probably fever being generally seen in the acuter forms. Digestive disturbances, involvement of the respiratory mucous membrane, still nervous symptoms, muscular and articular pains are not uncommon.

The prodromal stage may be absent or unnoticed, if so, the cases may be of the central and reflex variety.

The duration and course of the eruption is so variable that no rule can be established which will serve to fit the average case. There is langour, headache, muscular and articular pains, anorexia, chills, insomnia, etc., after the eruption has appeared frequently

the desire to itch is marked and may become most annoying, especially as the temperature falls, although may appear with high fever.

The study of the fever in erythema has been ignoring for dermatologists follow too closely the teachings of the Vienniese school. Polotebnoff concludes that neither the height of the fever nor its duration shows any proportion to the morphology of the eruption or its duration.

The history of erythema is generally as follows: A marked proformal stage is first seen and the general symptoms subside on the appearance of the eruption. If the prodromal stage is not marked, and the eruption develops slowly and irregularly being prolonged by numerous relapses with higher or lower temperature, the intercurrent affections occurring in one part or another are more easily observed and may be varied. Singularly one type may prevail one year and another in a later year. Thus, gastric catarrh was seen in Polotebnoff's experience in erythema in 1876-8, while in 1883 affections of the mucous membranes of the air passages were noticed in his clinic.

Simple erythema is frequently found by the physician in small isolated and disseminated patches upon the buttocks and neighboring parts or in diffuse patches generalized over the whole area. In either case, however, the primary lesion is a small vesicle which dries up or is torn open, leaving a vivid redness behind. Their vesicles are closely grouped, and as they dry up make a continuous patch, of which the centre is dry while some traces of vesiculation may be observed at the edge. or the vesicles may be larger with thicker fluid contents, with the result that there is a weeping surface with crusts. The treatment of this depends on the diaguous for when the cause is removed this erythema is quickly healed.

It is well for family physicians to remember that simple erythema in newborn infants has a peculiar seat, most marked on the convex surface of the buttocks, although not confined to this location. It may run over the scrotum or the vulva, perineum, the inguinal regions, and even the umbilicus.

The nature of erythema is probably accepted now to be an infectious disease or rather a symptom of an infectious disease which may or may not present a marked eruption or any eruption. Some forms of erythema, however, are to be included among the central vaso-motor neuroses, and these are those chronic forms which run on sometimes for years either without intermission or with exacerbations and relapses. Polotebnoff attributes these forms of erythema to a "constant or cyclical relapsing vaso-motor neurotic disturbance," while he reports certain rare forms of erythema are met with which are due to vegetable parasites.

Dermatologists realize that it is only by such an etiological classification that the great variety of the course, the concurrent symptoms, complications of this disease can be handled.

Symptomatic treatment is indicated such as alcoholic lotions or powdered starch for the itching. This may be enough in the rapid and self-terminating form of the disease, but not in recurrent cases. In these, quinine is usually the best internal remedy. When enlargement of the liver or spleen is present, Polotebnoff gives it in doses of six to nine grams a day in two or three doses until these organs return to a normal or a nearly normal size. Polotebnoff is inclined to think that quinine hinders the recurrence of the disease and prefers the bromide of quinine (hydrobromate of quinia). In highly nervous cases the bromides with quinine seem particularly useful. In vesicular and bullar erythema Unna's salicylic acid paste is useful, and where the eruption is extensive warm baths by relieving the tension of the skin hasten the healing of the eruption. In cases where frequent relapses occur, no inward or outward means seem to do good and the patient's general condition becomes greatly deteriorated. Sometimes the patient's surroundings (unhealthy habitation or locality) seem to influence the continuance of the affection. In such cases change of locality sometimes acts favorably. Where any central disturbance of the system (e. g., Bright's disease) seems to affect the course of the disease or to act as a cause, relief of the central malady affects the erythema favorably.

Congestion of the skin which is shown in a bluish aspect with hypertrophy of the hands and feet as soon as the cold weather comes on predisposing of frost-bite is common in lymphatic patients. In these cases foot and hand baths of a docoction of walnut leaves have been recommended. Immediately after the baths rubbings with camphorated oil is to be done and then the parts are powdered with a mixture of five parts of salicylate of bismuth and forty parts of powdered starch, while exposure to excessive cold should be avoided. In the evening if there be much itching a wash of one part of tannic acid in fifty parts each of glycerine and rice water may be applied instead.

Papular erythema is less common than simple erythema, but more apt to be mistaken for other conditions. Discrete flat round papular lesions of 4 to 5 millimetres diameter, more or less, and of a peculiar deep red, often brownish or violaceous tint, covered with a thin scale and surrounded by a somewhat firm ring of epithelium is its characteristic appearance. The intermediate skin is natural in color, occasionally showing brown patches, the remnants of former lesions. Erosions sometimes nearly level with the skin, sometimes sunken are also met with at times. The lesions, which may vary from four to five to a dozen or two in number, are usually discrete but sometimes aggregated, and in rare cases for serpiginous patches. The buttocks, commonly near the crease, or the internal aspects of the thighs or upon the posterior surface of the calves are the common cites. This form of erythema is believed to be syphilitic by some writers. Sevestie, denying this, states that "if the papule is traced back to its origin it will be found to begin as a vesicle; that this vesicle denuded of its epidermal covering and irritated takes on a certain amount of induration and thus we have the elevated papule. The diagnosis is made by a general examination of the patient in whom no signs of syphilis are observed, the fact that the lesions are confined to the localities noted, and finally the observation of the

course of evolution of the individual lesion which rapidly follow the transformations noted."

To remove the cause of erythema is the first indication. Diarrhea should be checked. If chafing or the presence of smegma or other secretions are keeping up irritation these should be attended to. Locally infusions of elder flower or walnut leaves, solution of boric acid 1-30, bichloride of mercury 1-2000 may be applied, or the mercurial can be used in a bath. After bathing the skin with a soft linen and powdered abundantly with starch, lycopium, nitrate of bismuth or some similar powder. In some cases ointments suit well, as vaseline, simple or borated, or oxide of zinc ointment. Exposure to heat or cold should be avoided and extreme cleanliness is necessary.

GASTRIC NEURASTHENA.*

BY JOHN H. BLACKBURN, M. D., BOWLING GREEN, KY.

WITHIN the last two or three years there have come under my observation several cases which, on account of certain gastric symptoms, were diagnosed as dyspepsia or indigestion by several different physicians; but as the ordinary remedies, pepsin, diastase and nux vomica did not give relief, they fell under my care in making the rounds.

A careful investigation of the history of these cases, and a thorough consideration of the present ailment, showed each of them to be one of the class of gastric neuroses called by Leube "nervous dyspepsia" and by Ewald "neurasthenia gastrica." Each of these cases had been incorrectly diagnosed and improperly treated by different physicians. Most of us are favored by nature and begin life with a nervous system which responds to even severe mental or physical stress without detriment to itself. On the other hand, there are those whose nerve-tracts are inherently weak, from whatever cause, on which even slight irritation acts with marked effect. Thus we have that condition of "irritable weakness," "abnormal irritability or exhaustion," which we call neurasthenia.

The one symptom which characterises this condition is fatigue, or nerve tire, manifesting itself in muscular weakness due to "inadequate cerebral volitional innervation of the muscles." Whether this general condition is secondary to a disturbance of the ideational life as claimed by Strumpell is doubted by some.

M. de Fleury, of Paris, has recently advanced the theory that the psychic state is secondary to an impoverishment of function of the physical organism. Thus he differentiates neurasthenia, "the child of organic fatigue" from hysteria, "the child of an idea," and as further proof of this theory cites the fact that hysteria, primarily psychic, is susceptible to suggestion or psychotherapy, whereas neurasthenia, primarily organic is relieved only by rest and tonic medication.

Whatever may be the true pathology of the condition, there always exists a reduction of all forms of nervous energy, psychic, motor and organic, which gives rise to a host of subjective symptoms with few objective manifestations.

As to its etiology, neurasthenia is a primary in which there is an inherited lack of vigor and endurance, or it may be secondary to prolonged illness, mental and physical excesses, etc. In the primary or inherited cases there is not necessarily an existing neurasthenia in the parents, for it may be some debilitating condition as rheumatism, syphilis, tuberculosis or alcoholism which is apt to lessen the stamina and power of resistance of the offspring giving rise to the "inborn instability of nerve element." In secondary neurasthenia it may be preceded by anxiety or prolonged mental or physical strain, or there may have been the excessive use of stimulants, alcohol or tobacco, or as is frequently the case, it may be due to sexual excesses. Exhausting illness or toxic states may be etiologic factors.

A characteristic feature of neurasthenia is the multiplicity of symptoms, motor, sensory, mental and visceral. Besides the general symptoms of fatigue, neuromuscular weakness, mental depression and irritability, there are certain subjective symptoms referable to certain organs. Thus we have cerebral, spinal, gastric, or sexual neurasthenia. As a rule in the professional man, under prolonged mental strain, we find the cerebral symptoms predominating, so after traumatism there is apt to result the spinal form, or after sexual excesses there occur symptoms referable to the genito-urinary apparatus. In the same way I have observed that in the middle or working classes we find after prolonged illness or excessive physical strain there results as a rule the gastric form, these symptoms at least predominating. Thus we see that neurasthenia is not altogether a disease of the educated or higher classes.

In the symptomatology of gastric neurasthenia there is a great variableness even in the same case. The symptoms range from simple feebleness of digestion to a condition resembling in all its details a true catarrhal disturbance. The appetite is as a rule capricious, extreme hunger and anorexia alternating. The extreme hunger is satisfied by very little food.

A characteristic symptom which occurred in all of my cases is a "full feeling," at times an aching pain in the epigastrium coming on after taking food. Occasionally this pain may become marked—gastralgia. This full feeling is not influenced by the quality or the amount of food, for a glass of milk will produce as great discomfort as a hearty meal.

Other sensory disturbances are the gnawing feeling, or the sensation of a brickbat or shuck in the stomach, as have been described by some of my patients. The tongue as a rule is clean, but may be slightly coated. There is often nausea, but vomiting is rare, being more frequently found in hysteria. There is frequently pyrosis or eructation of gas. At times there is considerable gaseous distension. Eating may be followed by headache, dizziness, palpitation of the heart, or a desire to sleep.

An examination of the stomach contents shows variations from time to time, often a diminished acidity, but nothing diagnostic. The motor function of the stomach is normal, it being empty seven hours after a test meal. The bowels are almost always constipated, but occasionally there is a so-called diarrhea, or the discharge of large quantities of mucus, as occurred in one of my cases, the patient passing at one time about three pints of mucus.

It was the above mentioned symptoms which in all these cases led to the diagnosis of "stomach trouble." A further investigation showed that each of the patients suffered with general pains and weakness, and felt that food was not doing them any good. One symptom that

*Read before the Kentucky State Medical Association, Louisville, 1903.

was found in my cases was a tired feeling, often an aching pain, between and beneath the shoulders. Thus we find that in each of these cases the patient suffered with the symptoms of general neurasthenia besides those referable to the gastro-intestinal tract.

There are a host of subjective symptoms for which there is no organic basis on physical examination. Nearly all of them have a dread of some organic lesion of the stomach, as cancer or ulcer.

An important point in the diagnosis is the fact that different kinds of food do not have any effect on the course of the trouble, and the patients can eat substances ordinarily indigestible without any aggravation of the symptoms. The general feeling of these patients is very variable, for under pleasant surroundings they may eat heartily for days, and suddenly lose the appetite or have extreme aggravation of the symptoms under the influence of passion or emotion. Another point is the fact that these cases are not influenced in any degree by the ordinary treatment for ulcer or catarrhal gastritis, whereas they do yield to change of scene and climate, the rest-cure, tonic medication, etc.

In some cases the neurasthenia co-exists with some organic lesion as ulcer, cancer or catarrh. In chronic gastric catarrh the symptoms are more constant and are aggravated by errors in diet, and examination of the stomach contents will show diminished acidity, mucus, lactic and fatty acids. In ulcer we find pain after eating, vomiting, hematemesis and the characteristic point of tenderness. In cancer there may be difficulty in diagnosis in the first stages, later the pain, vomiting, cachexia and tumor formation will reveal the true condition.

Occasionally the general condition of the neurasthenic may be greatly depressed, but only one or two deaths have been reported from this condition.

The prognosis varies with the etiology. After prolonged illness or physical strain recovery may be rapid and complete. In many cases with an inherited taint the symptoms may be transferred to some other organ, or as in one of my cases the patient developed the gastric form after worrying for months with the sexual apparatus. Relapses are frequent, following as a rule marked physical exertion.

In the treatment of all these cases an essential is a careful and thorough physical examination of the patient, making a mental impression at the first, for there is no doubt that suggestion has an important place in the treatment of any condition in which the psychic element plays so great a part. There should be thorough confidence existing between the patient and the physician, for he needs your sympathy and encouragement. As some have said, these patients are relieved not by physic, but by the physician.

The essential element in the treatment of general neurasthenia is physical rest, so in the gastric form especial attention should be given to this. Specific instructions should be given the patient as to hours for sleep and for rest during the day, demanding that they be closely observed. The patient should be warned against overexertion, as this is certain to cause a relapse, as occurred in three of my cases. Exercise should be taken every day, which may be in the form of massage, if demanded, but as a rule this may be had in walking, riding or golfing. If the case requires it, the full Weir Mitchell rest treatment may be used for a time, but as a rule the gastric form never needs this. Hydrotherapy in form of sponge, shower of could douche in the morning may be used with benefit. Electricity, as general Faradization, electric baths, etc.

The diet should be nourishing and non-stimulating.

As to medicinal treatment, elimination is the essential point. Constipation should be relieved by a laxative pill of aloin, cascara and nux vomica. To aid in renal elimination large quantities of water should be given. The one remedy which in my hands has given better results than any other is the syrup of hypophosphites compound with strychnine and phosphorus.

Liquid Air Factory.—Among the most interesting exhibits planned for the St. Louis Fair next year will be a liquid air factory in operation, showing the method of filtering, cleaning, drying, and condensing atmospheric air, under a pressure of 3,000 or 3,500 pounds, to a liquid form.

The *American Exporter* thus gives a few particulars of the promised exhibit:

"A number of spectacular feats have been planned, showing the great power of the air and the numerous ways in which it can be advantageously used as a refrigerant, illuminant, explosive, motive power, medical and anæsthetic agent, etc., among which are the following:

"A kettle of liquid air boils on a cake of ice, 'steam' issuing freely from the spout. Boiling is further accelerated by putting a few pieces of ice in the kettle.

"Blazing paper or wood or a lighted candle, having liquid air poured upon them, are not extinguished, but burn with dazzling brilliancy.

"An icicle is made of alcohol. Whisky and other substances ordinarily difficult to congeal are easily frozen.

"Strawberries freeze, while steel melts. In the same small glass, and at the same time, liquid air melts steel pens with brilliant scintillations and freezes strawberries to 312 degrees below zero.

"Flowers dipped in liquid air retain their beauty and fragrance, but crumble at touch like ashes.

"Quicksilver is easily frozen so hard that nails are driven in a plank with a hammer of frozen mercury.

"A snowstorm daily in midsummer will be another startling feature. Snowballs 100 degrees below zero made and thrown among the spectators."

The Antiquity of Hospitals.—Many centuries before the Christian Era there existed in India and Ceylon institutions which performed the functions of hospitals (*Real Encyclopaedie,* Eulenburg; *Philadelphia Med. Jour.*). They were built and maintained by the Buddhists. In the Scriptures there is mention of what the Hebrews called Bethesda, but this was nothing more than a few rude huts in the neighborhood of a mineral spring supposed to have healing properties. According to Lecky (*History of European Morals*), the first hospital was founded by a Roman lady named Fabiola, about the fourth century, at Rome. Soon after, another hospital was founded by St. Pammachus, and another by St. Basil at Cesarea. During the crusades numerous hospitals arose in all parts of Europe. San Spiritu, built by Innocent III., was erected in 1204 at Rome. The first hospital in England was built by Lanfranc, Archbishop of Canterbury, in 1080. The first hospital of any size erected in America was the Pennsylvania Hospital, begun in 1751 by Dr. Bond and Benjamin Franklin.

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"One who never turned his back but marched breast forward,
Never doubted clouds would break,
Never dreamed, though right were worsted, wrong would triumph,
Held we fall to rise, are baffled to fight better,
Sleep to wake."

—Browning.

EGBERT GUERNSEY, M. D., LL. D.

THE Senior Editor and founder of the *Times* passed to the higher life on Sept. 19, at his summer home, Fishkill Landing, N. Y., of bronchopneumonia, following a lingering illness of organic heart-disease.

Dr. Guernsey was born in Litchfield, Conn., July 8, 1823,, and was a descendent on both sides, from the best Puritan ancestry. His preparation for college was made at Phillip's Academy, Andover, Mass. He began the study of medicine in the office of the late Dr. Valentine Mott, and graduated in 1846 at the Medical Department of the University of the City of New York.

He began the practice of medicine in Brooklyn, where he was the City Physician, and in 1850 located in New York City.

Dr. Guernsey until within a few years, has been most active in practice, in college, in society, in hospital and in editorial work. In 1870 he organized the "Western Dispensary," which has since become the "Guernsey Maternity," in connection with the hospital, of which he was one of the founders. In 1877, he with others, were instrumental in organizing what is now the Metropolitan Hospital, and he was President of the Medical Board from its beginning until removed to a higher sphere. He was a man of great activity, mental as well as physical, and in his earlier years was associated with others in editorial work, upon the daily press and in other literary lines. He was an able and voluminous writer, and always thoroughly abreast of the times, even to the last.

Dr. Guernsey's strong personality has exercised a remarkable influence upon all with whom he has come in contact. He grasped with his broad and liberal mind the truths of the dual action of drugs, and he has been constant in advancing this principle, to the end, that the schools of practice are almost within touch of one another. It may be said that Dr. Guernsey was the heart-centre, around which there congregated a host of liberal minds which emulated his principles, and strove to perpetuate the methods which he enunciated. May his mantle fall upon heads worthy and equal to perpetuating the great task which was nearest his heart.

To the very end his mind was clear, active, strong, and his interest in the editorial work of the Times unflagging. So long as physical strength permitted he dictated matter for its columns, and when this failed it was his delight to converse with his associate over the current events which were to form the basis of the work of others. Thus, with a life full in years and a brain clear in thought, did our friend lay down his pen.

To the poor and needy his skill and purse were ever free, and Bret Harte has well and truly said of Dr. Guernsey in *The Man Whose Yoke Was Not Easy*, he was "A man of broad culture and broader experience; a man who had devoted a greater part of his life to the alleviation of sorrow and suffering; a man who lived up to the vows of a noble profession; * * * whose face was kindly, whose touch was as gentle as the dying Narcissus; a man who, through long contact with suffering, had acquired a universal tenderness and breadth of kindly philosophy; a man who, day or night, was at the beck and call of anguish; a man who never asked the creed, belief, moral or worldly standing of the sufferer, or even his ability to pay; * * * in brief, a man who so nearly lived up to the example of the Great Master that it seems strange I am writing of him as a doctor of medicine and not of divinity."

Dr. Guernsey married in 1848 Sarah Lefferts Schenck, and two children blessed the union, a daughter and a son. The greatest sorrow of his long life was the death of his son, Dr. Egbert Guernsey, Jr., a promising young physician. Mrs. Guernsey preceded her husband by about two years, after a life of good works and years.

The daughter, Miss Florence Guernsey, remains to mourn the loss of those so dear to her. The hearts of all who know will go out to her in this final and greatest bereavement. We can only offer her our mite in consolation.

Requiescat in Pace.

THE FIRST STEPS IN MEDICAL PRACTICE.

WE have already pointed out the very moderate degree of financial success which may be expected in medical practice and our present words are addressed to those who are embarking in practice, with a genuine love of the work before them and an ambition for true professional success. To such, the first few years, even the first few months of practice often determine the course of the entire voyage. Most young physicians begin with comparatively slender resources; this is well, for it is only exceptional men that can make a success of any line of work, unless they have bread and butter interest in it. Moreover, an obligation rests upon the young man of wealth, to assume some life work in which large capital can be directly serviceable or, if he is philanthropically inclined, to undertake some useful task in which a poor man cannot engage. Yet, it is now almost imperative that a physician beginning practice in a city should have some other means of support for from one to four years. From a considerable number of personal confessions, we are inclined to believe it very exceptional for a physician without influence to make more than three hundred dollars in his first year of practice in any ordinarily desirable and respectable neighborhood, in a city, not even excepting men of years and experience in medical practice, unless they come with an established reputation or a definite backing. As a rule, we would rather advise against a salaried position with another physician or in a laboratory, with a health board, corporation, etc., unless the position pays sufficiently well to be considered permanently desirable, or unless the hours and conditions are such as not to interfere materially with the establishment of one's own practice. A position as assistant to another physician in private practice seldom pays more than a bare living, and it is unfortunate for a young man to wear another's livery. Many practitioner's of reputation make a practice of using young men to pull chestnuts out of the fire for them, discarding one for another, as he becomes inclined to think and act independently. Some men expect, in good faith, to recompense an assistant, not only with direct wages but by helping him to a good position, but on the whole, such partnerships seldom turn out to the best interests of the assistant, unless the senior happens to die or to become disabled at just the right time. On the other hand, informal co-operation and mutual helpfulness, with those of one's own age or older men, are usually of the greatest service, not only to the participants, but to their patients.

The young man who is bound to get rich, should do one of two things, abandon medical work, or go into quackery. The one who has made up his mind to stick to legitimate practice should be most careful at the start. While it is easy to say that medical ethics is comprised in the Golden Rule, or in the conduct of a gentleman, there are many points in which ethics and mere etiquette closely approach, and one unfamiliar with medical customs which, by the way differ considerably in different communities, may commit blunders in perfect innocence which will render him an object of suspicion for many years. For instance, one excellent young man thought that it was just as proper to place "A.B." as "M.D." on his sign, another brought discredit on himself because his sign was six feet instead of two feet long. In some cities, the best physicians flock into office buildings, in others, a medical man thus located is presumed to be a quack until he proves otherwise. Curiously enough, one of our national societies whose main interest is medical ethics and polity, has recently had to censure one of its officers for placing on his card announcements of membership in societies, although in certain small communities this is rather a common custom. In some cities, not even announcements of limitation of practice are allowed on cards, while in small villages, it is often considered simply a matter of public spirit, to advertise one's location and office hours in the weekly paper. Some medical societies expect the new comer to seek membership, in other instances such action would be considered as much of an impertinence as to intrude into a private social gathering. It is a safe rule for the young physician to find some older adviser to consult with in regard to almost every professional act

The young practitioner must not lose patience. In novels, he has a hard struggle until he achieves some signal success or gains some opportunity. In real life, he keeps on struggling until, after years and years of hard work, such successes and opportunities gradually become more and more frequent. The great danger is, that after the first year or two, the young man will lose his grit and his grip. We recall an acquaintance who, at this period in our career, argued eloquently that we ought to be allowed to advertise our cures. We reminded him that for one cure that we could proclaim from our meagre clientele, our older associates could mention a dozen. But he had convinced himself of the injustice of his lot, and soon after, he appeared in the advertising columns of the daily press. He was, of course, expelled from certain medical positions which he had gained by real merit and which, though of minor importance, placed him in the line of promotion and the same paper which accepted his money for an advertisement in the regular columns, announced his expulsion with fine sarcasm: "Here is one ad. that will not cost him anything." This man abandoned advertising years ago, probably because it did not pay. Recently, the matter was recalled to our mind by seeing his sign on a cheap house and on the handle of a door was a slate inscribed "Please leave messages." By the way, the slate on the front door or a relative over-anxious to construe a frendly call or one on business as a need for the doctor's services is one of the sources of frank merriment on the part of the veteran doctor or even the experienced layman.

The young physician should early resolve not to commit murder, in other words not to try to hold a case alone when he is incompetent nor to do abortions; not to steal, in other words not to be too ready to appropriate a patient from his regular attendant nor to villify the latter behind his back—apart from the ethics of the matter, patients who come in this way or who invite censure of their previous attendant are usually dead beats and will turn against their champion when the opportunity occurs— and we may add that many a man owes his failure in practice to breaking the tenth commandment. It certainly is hard for a young man just starting in practice, not to covet his established neigh-

bor's cases and apparent prosperity. But, perhaps, even the man of long years of practice needs the dollar or two of a particular patient just as much for his wife and children as the young man does for himself. Undoubtedly, Mr. A ought to employ you because he has known you from boyhood and appreciates your hard study and ability, but, somehow, it is natural for him to continue to employ Dr. B, who has brought his children into the world and has saved his wife's life, and, sometime, after years of hard work, when you have fully realized that the great strain upon a physician is not so much "cooking the hare as catching it," you will appreciate this spirit of loyalty. Then, too, you will gradually learn that the apparent restriction of your practice to the more or less honest poor is not entirely due to your youth, but is common to the beginner in practice in any city, and you will be surprised to note how some of these very poor patients gradually rise in the world and manifest their appreciation of your services, by paying higher and higher fees.

Many a physician spoils his life by the bitter spirit condemned in the commandment against covetousness. You will easily encounter two extremes, the physician who is always bragging about his success and who never has time between his professional engagements to attend medical meetings, to read journals nor to do much of anything except descant upon his numerous cases, and at the opposite extreme, the physician who believes himself the victim of base ingratitude on the part of those who should have helped him and those who are winning at least some sort of success by various dishonorable methods which include a mysterious scheme for keeping patients away from worthy practitioners. Do not accept too literally either the braggart's or the sore head's tales, and do not believe ill of a man until you have first tried to know him personally. If you are told that a medical society is a mutual admiration society, conducted by a clique, join another, or, if the first society is too large and strong to be ignored, join that, insist modestly on your own rights and lend your influence in a quiet way to squelching the clique and supporting those who are being unfairly treated. Cast your vote against, but don't waste too much energy in opposing the chronic office-holder. Some boys won't play unless they can be catcher in a game of baseball or captain in a soldier company, and they never get over it. We have many such in the medical profession, who practice all sorts of political tricks to obtain certain "honors" in societies, but don't let them irritate you. The real leaders are on the floor of the society, not in the chair, except for brief periods, and the men who have the itch for office really do considerable clerical work and are useful in their way, so that we should not grudge them the very empty honor that they hold.

You will hear similar stories about medical colleges, hospitals, dispensaries and every other institution. Investigate these stories on your own account, impartially and quietly. If you find them true, keep away, don't lend your influence, contrary to your principles, to an institution that is not conducted honorably and fairly, simply because you are offered a sop or have hopes that one may be thrown at you some day; but, on the other hand, don't try to start out as a promiscuous reformer and lend strength to a bad cause by overzealous and exaggerated condemnation. Follow the same plan with regard to individual physicians and remember that every man who has a "graft" owes whatever success he may have, not to the ignorance of his dupes, but to the support of men who hope, in return, to receive a share of that "graft."

Be very sure that you are right in your principles and that you are conforming to customs, neither right nor wrong in themselves, but which are commonly accepted as the index of right principles. Be sincere and charitable and you will succeed according to the measure of ability that is your endowment.

MEDICAL AND LABOR ORGANIZATION—THE DIFFERENCE.

THE frequency with which labor unions have made use of their most effective weapon, the strike, and the considerable inconvenience which has resulted to the public, has, within recent years, engendered in the minds of the professional and business classes, a feeling of hostility to the laboring man quite as much as to the capitalist. Among the laboring class itself, there is a surprisingly large minority—though still most emphatically a minority—that joins the labor union with the utmost reluctance or, in individual cases, holds out stubbornly against the union and leads an existence which must be in its economic aspects, a fairly close imitation of the life of a heretic of the middle ages, since it involves social and business ostracism, and, not rarely, persecution to the death.

It is not our purpose to follow the example of certain medical (?) journals and to devote our editorial columns to discussions of political and social economy except in regard to problems that have a pretty direct bearing upon medical science or practice. The general issue at stake is not germane to the province of a medical journal, but we feel justified in alluding to unionism in so far as it has been considered by the public or by labor unions themselves, to be in line with medical organization and to be sanctioned by the precedent of the medical profession. That a very general, though doubtless superficial belief in the close analogy between the organization of the medical profession and of union labor, exists, requires no argument. This belief naturally expresses itself in two phases; the physician is expected to manifest his sympathy with organized labor; or else the same persons who object to the latter, feel themselves to be hostile to the regular physician or even to sectarian physicians similarly organized and adhering to the same principles of ethics, while their sympathies are enlisted equally in behalf of the scab and of the quack. This attitude of a considerable portion of the laity not only virtually accuses the great majority of physicians of inconsistency—a matter of no great importance—but it ascribes to the medical profession a code of ethics as workers which is inimical to the interests of the general public who employ their labor. Even the union laborer—using, now, the word labor in the restricted sense—who holds this conception of medical organization, is scarcely less out of sympathy with the medical profession, than the critic of the business or extra-medical professional class for he

regards the physician as a member of a union endeavoring to get as much as possible for services, while he is likely to regard the work itself as of an easy nature and he has not the fraternal feeling of well wishing toward one engaged in professional work which he has toward a manual laborer in some other trade.

At first thought, it may not appear to be important whether the laity regard medical organization in its proper light or not, but, entirely aside from the natural desire to have our motives favorably construed, both the welfare of the medical profession itself and the influence upon which the welfare of the community largely depends, are derived from the reputation which the medical profession enjoys with its clientele.

In a certain broad sense, most men will agree that every human being ought to belong to the Church—or at least to some church (with a small letter instead of a capital). Likewise, we may agree that, in the same sense, every worker ought to be affiliated with his co-workers of the same craft. But it is a very different matter to hold that the exceptional man, crank or otherwise, as we may regard him, should be forced to belong to the church, the union or the medical society against his will or to be subjected to persecution or diminution of liberty and the ordinary privileges of citizenship, if he elects to be a heretic, infidel, scab or independent of any kind. This is a principle of ethics worldwide and limited to no period of history yet, in its practical recognition, deserving to be regarded as essentially an American institution. Does the medical profession, as is very commonly held, disregard this inalienable right of American citizenship?

The first and important fact in regard to this question is the entire absence of anything like a general professional society, membership in which is a prerequisite to professional recognition. True, the American Medical Association is striving to organize the profession through the means of state and county societies, but the whole effort is voluntary and, the more universal such membership becomes, the more nominal and the less restrictive is it. This is well illustrated by the former New York State law, requiring physicians to be members of county societies. Such a requirement certainly savors of unionism, but the fact that every physician was, ipso facto, a member of an organization, removed all possible danger of evil results to the community for the functions and limitations of the county societies were controlled by the State and, while the scientific, social and business facilities of the legally required societies have been of value to the profession and continue to be now that the organization is no longer obligatory, the actual working of the law amounted merely to a compulsory enrollment and a special tax, which was practically uncollectable if any physician objected to it. On the isolated occasions on which it was attempted to use the county organizations in the financial interest of the profession or to inforce fine ideas of ethics, it was very quickly found that any such attempt was ultra vires. Probably a third of the entire medical profession of the country belong to no association of any kind and while these men lose the advantages of mutual improvement and acquaintance, they are in perfectly good standing and they suffer no form of ostracism.

One of the dominant principles of trades unions is the establishment of a high and uniform wage scale, so that the competent and incompetent are averaged upon a common basis. Such a plan is by no means without its justification, but the dominant American idea is still so largely individualistic, as opposed to socialistic, that it is generally condemned by those capable of an impartial opinion. The fee bills of certain medical societies have been considered to place the medical profession in the same light as the labor union, in this regard and with some justice. Yet it must be remembered that the idea of the fee bill was to establish a customary rate for routine services, not to prohibit a less or greater charge according to individual circumstances that it has seldom been attempted to make the fee bill compulsory and that any such attempt has signally failed. A fee bill is now almost a historic curiosity and, at its worst, it merely established a scale of "piece work," on which basis, the individual is allowed to accomplish and to receive pay for as much as his individual ability and industry permits.

Unionism embarrasses the employer of non-union labor, to the utmost. The man who sees fit to employ a scab, must be careful or he may be refused the services of a union workman, not necessarily of the same trade, at a time when such a refusal will prove most disastrous to his welfare. So far as the medical profession is concerned, it is only in the rarest instances that even gross maltreatment of a former medical attendant and absolute dishonesty has prevented or delayed the obtaining of similar services when needed. It seems never to have occurred to the medical profession to have questioned whether any request for medical services came from a person who had employed scab labor, who had dealt with irregular real estate or insurance agents, who was heterodox in his religious affiliations, who had employed a shyster lawyer, or who had even consulted medical quacks of one kind or another. The only restriction that has ever been in vogue is that physicians of one school or dogma have refused joint attendance with members of a diverse cult, with whom they were in disagreement as regards general conceptions of medical science. Even this hint of unionism was really in the interests of the laity and in line with ordinary business honesty for it is, on the fact of the matter, absurd for two men to receive a fee for a service which is of value to the man who pays it, only when a substantial agreement can be reached and when agreement is out of the question on general principles. Yet, with the practical approach to a common ground, on the part of schools theoretically in disagreement, the fallacy of this belief regarding consultation has been appreciated and very few physicians remain who adhere to the former rule, although the regular profession is still divided between the policies of openly relegating the rule to history and of maintaining it with provisos that rob it of its practical efficiency.

The most dangerous weapon of the union is the strike, which has been wielded with little provocation and with the utmost indifference to the welfare of the community at large. There have occurred isolated protests by organizations of physicians against rank injustice, which have been called "strikes" in sensational reports. In every such instance of which we have known, the utmost precaution has been observed that no actual suffering should arise from the concerted action, whatever the abstract merits of the case.

The dominant tendency of labor unions has been the pecuniary and social benefit of the laborer interested. This tendency is most commendable but it should be checked by the realization that it is equally the duty of such an organization to improve the value of the laborer's service to the community and not to demand more than the actual value of the work itself. So far as has ever appeared in the reports of the proceedings of labor unions; either local or general; almost nothing has been done in the way of educating the laborer in his particular trade or in urging individual effort at putting forth more skill and accomplishing more in a unit of time. On the contrary, "rushing," which simply means working as rapidly as possible, without undue fatigue, has been definitely denounced and, in many localities, the skilled laborer, even on a basis of "piece work" is absolutely prohibited from accomplishing more than what a comparatively inexpert workman can do and the use of labor-saving machinery is tabooed. It is scarcely necessary to contrast this with the spirit of medical societies. A single instance will suffice—in a certain society of ten years' existence, approximately 1000 papers have been presented. Of these, just one has dealt with the financial welfare of the physician, the rest have been devoted to the object of improving his value to the community. On one occasion, the representative of a telephone company wished to appear before the society to present a scheme which promised a saving of from ten to fifty dollars a year, to each individual. While there was no question as to the reality of the economic advantage claimed, he was informed that he must deal individually with the members and that the privilege of the floor would be granted him only if he had some positively scientific demonstration to present.

Exact statistics of per capita wealth, are not available in this country, but it seems beyond question that the average union wage scale is already higher than the value of the service rendered. In other words, if all the wealth of the country could be put into circulation equally, there would not be enough to pay any man the union wage scale, for continuous work at a fair number of hours a day. Yet the very number of men engaged in so-called skilled labor, shows that they are not entitled to more than the average pay. On the other hand, there is no line of work so poorly paid as medical practice, in proportion to the requirements. Indeed, it is very doubtful if the average physician receives actually as much as is demanded by the union wage scale for trades requiring no purely educational attainments and only a moderate degree of skill.

We have endeavored to mention the principal differences between medical organizations and those in the interests of labor, but, at the same time, to call attention to some details in which the medical profession has inadvertently allowed itself to be placed in apparently too close analogy to the labor union. A word to the wise is sufficient.

SALT AS A FACTOR IN CANCER.

THERE is no disease which is looked upon with more dread, not only on account of its generally fatal termination, but with a suffering attending its progress, than the various forms of cancer; and there is none to which more minute study has been given during the past few years by our ablest thinkers in the field of pathology and therapeutics as to its origin and treatment. Thus far no specific has been found, although remedies have recently been discovered which in many cases have been successful to such a degree that we are led to believe that still further investigations along the same line may lead to a greater success and place this most fatal malady on the list of curable diseases. This result can only be reached by ascertaining the cause and tracing the pathological changes which might naturally result therefrom.

Dr. James Braithwalk publishes a long article in a recent number of the *London Lancet* in which he advances the theory that excessive salt in the diet is one of four factors which originate cancer. Although an essential factor it is ineffectual he thinks, without at least one and probably two of the others. These are an over nourished condition of the body from more food, especially meat, than is required, and an impure condition of the blood, owing to the non-use and non-oxidation of the foods which has been taken. It obtains in old age, as in persons who lead indolent, easy, indoor lives and locally in organs of which the active functions have ceased. A fourth factor is some local irritant or stimulant, such as frction from the stem of a pipe or irritation from some micro-organism, of which no one is actually specific, or from some ovarian stimulation, in case of the breast. Of these factors the first must always be present and probably in some form the fourth.

Dr. Braithwalk is the gynecologist of the Leed's General Infirmary and this line of thought originated from the fact that cancer was seldom met among the large number of Jewesses attending the gynecological department of that institution. Dr. Turnstall, medical officer to the Jewish Hospital for Incurables, says he has never seen a case of cancer among Jewish patients. The difference in diet between Hebrews and Gentiles consists mainly in the absence of bacon and ham from the Hebrew diet, and as the pig is the only domestic animal in which no case of cancer has been found, it must be the salt, not the flesh, of the animal which is to blame. The Hebrews also eat less butchers meat and more fowl and fish.

Savages, so far as is known, are exempt from cancer, and they get no salt. All the domestic animals except

the pig are subject to cancer and salt is given to sheep, cows, and horses, but never to pigs. The wild carnivora, with of course a pure meat diet, are exempt. On the other hand, when confined in zoological gardens they are given salt and become subject to cancer. An African hippopotamus recently died from cancer in the zoological gardens in London, but salt had been given to it with its daily food. Wherever there is an extensive cancer field or a district in which the inhabitants seem to be especially prone to the disease it will be found that the people have an excessive meat diet, largely consisting of ham and bacon. This Dr. Braithwalk noticed in the notorious Matton-Pickney district as well as in Wetherby. One common factor he found ir these places—that the farming class eat meat or bacon two or three times a day. The poorer class who eat less meat and accordingly less salt, are comparatively exempt from the disease in these districts.

Thus far the doctor's investigation only points to the probable cause of the disease and its prevention; but for its actual cure after it has invaded the system, while keeping constantly in view the factors which are most instrumental in producing it, avoiding them as far as possible, we must look to some remedy of which he gives no hint, to destroy the germ scattered through the system. The theory, therefore, advanced by Dr. Braithwalk points more to prevention than to cure, and, of course, if proved to be correct, in the line of prevention of disease to which the attention of the profession is now so strongly directed, will be of great benefit.

SANOSIN IN CONSUMPTION.

IN a recent issue of the *Times* we referred to a new combination under the name of Sanosin for the treatment of consumption which during the last six months had attracted the attention in a marked degree of the leading medical men in Berlin. In September Dr. Theodore Sommerfield who is a member of the Faculty of the University at Berlin and a prominent authority in pulmonary diseases, and Dr. Danelius, also a lung specialist, presented to the Medical Society at Berlin a thesis describing their experiments of treating tuberculous diseases by the inhalation of the combined fumes of eucalyptus, sulphur and charcoal. On account of the extreme volatility of sanosin it is put up in glass tubes, each containing a dose of about thirty-one grains, in which condition it is to be sold like other medicines through authorized druggists.

Hon. Frank H. Mason, United States Consul-General at Berlin, has sent to the Department of Commerce and Labor in Washington, where it is published in the *Monthly Bulletin of Consular Records,* issued by the Government an account of the success of this treatment gathered from the thesis of its discoverers. When used the tube is broken and its contents poured on an earthen ware plate heated by a spirit lamp. The volatile eucalyptus quickly evaporates and in combination with a small quantity of sulphurous acid fumes generated, medicates with an aromatic penetrating odor the air of a closed room in which the tuberculous patient lives in an easy natural way. The experiments were directed by the discoverers, a special clinic or hospital ward having been opened for that purpose in the Moabit quarter. Other physicians were assigned to the various details of the work. One made regular and frequent examinations of the sputa, keeping careful record of the changes in each case from day to day. Another made a daily inspection of their general condition, temperature, pulse appetite, etc., so that the collective record in each individual case was the work of several expert physicians. The patients were taken from the poorest class of sufferers, many of whom lived in damp, unsanitary dwellings. Each patient before being admitted was required to present a certificate from the Royal Hospital showing that he had been treated there and was suffering from progressive t uberculosis. Many when admitted had reached a stage at which hope of relief by ordinary means had been practically abandoned. Thus far 150 patients have been treated, of whom more than fifty per cent. have been discharged cured. Some have been able while under treatment and sleeping in the hospital at night to spend parts of the day at their usual occupation.

Dr. Engel, the expert charged with the examination of the sputum, in which he has had a long experience under other forms of treatment, reports that under no other treatment has he seen the character of the sputum changed so rapidly and uniformly through the diminution and disappearance of baccilli and the elastic fibres peculiar to tubercular disease, as under treatment with sanosin.

Professor Sommerfield and Dr. Danelius in the conclusion of their thesis before the Berlin society say: "The inhalations act with greater certainty in removing the catarrh which accompanies pulmonary phthisis than any other medicinal or physical measures directed to the same end. This is shown especially by the fact that the expectoration on the one hand decreases or disappears entirely, or on the other hand in acute cases changes its character. The fact that the patient generally is quickly relieved from the troublesome and irritating cough is of the greatest importance, especially as the sleep which is absolutely requisite for a recovery from fundamental disease can then be obtained. The appetite in almost every case increases under the influence of the inhaled vapors and through an increased consumption of food the second preliminary condition for the cure is furnished."

NITRIC ACID FROM AMMONIA.

A CHEMICAL discovery of great value has recently been made in producing nitric acid from ammonia. A current of air is passed through ammonia and the mixture of ammonia and air is then passed over heated platinum, the result being that the oxygen of the air oxidizes the ammonia to nitric acid. Nitric acid produced in this way is much cheaper than it can be obtained by any other method. In an agricultural country artificial fertilizers, rich in nitrates, are required, and any process by which these can be obtained at a low rate increases the agricultural wealth of the country. The new discovery can also be used in the manufacturing of dynamites, which are now used to an enormous extent in war and where even dynamite is required. Nitre is obtained principally from Chili, and, of course, at considerable expense; even these beds now so productive, will, with the present demand upon them soon be exhausted. But when nothing else will be required to produce it but ammonia, which is very cheap, and almost inexhaustible, the cost will be nearly normal.

BIBLIOGRAPHICAL.

KING'S MANUAL OF OBSTETRICS. By A. F. A. King, M.D., Professor of Obstetrics and Diseases of Women, in the Medical Department of the Columbian University, Washington, D. C., and in the Medical Department of the University of Vermont. Ninth edition, revised and enlarged. In one 12mo volume of 628 pages, with 275 illustrations. Cloth, $2.50, net. Lea Brothers & Co., Publishers. Philadelphia and New York. 1903.

As stated in the preface to the first edition, the chief purpose of this book is to present, in an easily intelligible form, such an outline of the rudiments and essentials of Obstetric Science as may constitute a good ground work for the student at the beginning of his obstetric studies, and one by which it is hoped he will be the better prepared to understand and assimilate the extensive knowledge and classical descriptions contained in larger and more elaborate text-books.

"Whatever value the book may offer to the practitioner for purposes of reference, I cannot but hope it may prove of service to those whose onerous duties allow but little leisure for consulting larger works, and who simply desire to refresh their minds upon the more essential points of obstetric practice.

"In the preparation of the Ninth Edition such additions and changes have been made as the progressive development of Obstetric Science seemed to require.

That Dr. King is over-modest in his statements is easily shown by the demand which has necessitated so many large editions of his very popular manual, and, again, this popularity is easily understood upon a perusal of the book. The amount of practical information it contains is astonishing,and yet it would be difficult to find a superfluous word. It is one of the very few books which may be described as "all meat," and its frequent careful revisions keep it always representative of the latest accepted views.

THE PRACTICAL MEDICAL SERIES OF YEAR BOOKS, comprising ten volumes on the Year's Progress in Medicine and Surgery, issued monthly. Vol. 8. Materia Medica and Therapeutics, Preventive Medicine, Climatology, suggestive Therapeutics, Forensic Medicine. July, 1903. The Year Book Pub. Co. Chicago.

The departments are all ably edited, the commendable and valuable points that have appeared in medical literature during the year being concisely, but clearly, presented. The small size of the volume renders it peculiarly acceptable for ready reference.

The Medical Directory of the City of New York is a volume of over 600 pages, containing a list of legally qualified physicians of this city, and also of the States of New York, New Jersey and Connecticut, together with much other information of value to physicians; especially concerning the Medical Societies, Colleges, Publications, Examinations, Boards of Health, Contagious Diseases, Hospitals, Dispensaries, Benevolent Societies, Asylums, Homes, Nurse Agencies, etc.; also a list of Pharmacies, Culture Stations and Examiners in Lunacy.

This directory publishes lists of physicians of all schools, their office hours, telephone numbers, colleges and years of graduation. The Medical Society of the County of New York is the publisher, and Dr. Edmund P. Fowler its accomplished editor.

CORRESPONDENCE.

EGBERT GUERNSEY.

Farewell Comrade! Thy work on earth is done;
For years three score thou'st steadfast stood for right
'Gainst error and schisms, with prophetic sight—
'Gainst conceits and myths, that under the sun
Gain place and power and rank ignobly won.
Nobly hast thou wrought in the unequal fight,
Nobly hast thou won by faith in truth and right;
Nothing less wast thine from thy exalted zone.
Virtues rare thou hadst, 'mongst them Charity,
Which no evil thinketh; the love of Truth,—
The supremest virtue; and from thy youth,
Love of Man and of largest Liberty.
If "glory bides when calumny hath fled,"
Virtues live in the dear departed dead.

—DAVID ALLYN GORTON.

September 19, 1903.

THE CANADIAN MEDICAL ASSOCIATION.

The Canadian Medical Association held its thirty-sixth annual meeting Aug. 25-28, in London, Ont., well-named the "Forest City." Having been the guest of this association several years ago in Toronto, the writer looked forward with pleasure, to a second enjoyment of its warm hospitality and it is scarcely necessary to say that he was not disappointed. Gould of Philadelphia, Ferguson of Chicago, Butler of Alma, Mich., and Wood of Nashville, were guests of the Association and, doubtless, all wondered, as did the writer, whether we manage to entertain and benefit the Canadian guests of our own societies, so well as they treat the American guest who crosses the border. Certainly, we mean to, and we hope that royal hospitality is not inconsistent with democratic institutions.

Differences in customs of different nations are always interesting and instructive—perhaps we fail to remember how slight the differences are among all civilized peoples and especially when language and history are the common inheritance of two nations. The Canadian Medical Association has an attendance of three or four hundred and can, therefore, be conducted without the elaborate machinery which is required for the American Medical Association. This is certainly an advantage, for we know that the A. M. A. machinery sometimes creaks and that there is sometimes a disagreeable odor due to the overheating of waste. An audience of more than a few hundred is always unwieldy and an audience of a thousand or more has to be considered simply as an audience. Thus, anything like a general discussion in the A. M. A., as a whole, is impossible, and even some of its sections are too large to work easily. The Canadian Association, still retains the advantage of small numbers and easily conducts its meetings under a division into medical and surgical sections.

The personel of the Canadian Association strikes one as more homogeneous than that of the American body. The writer would not admit that any country in the world could produce ten medical men who could not be matched by ten from the United States, especially as the United States does occasionally assimilate a member of another country who is not of the defective, asylum

seeking class. Indeed, we might say to the Canadian profession, Where in your whole country, can you find a medical man that is superior to our Osler? At the same time, one has the feeling that the Canadian profession has been leveled upward toward the great men. While, at present, medical education in most of the United States is commensurate with that of Canada and while we may be pardoned for assuming that two, and possibly four, of our medical schools are considerably in advance of the standards of others on the entire Western Continent, it will be many years before death removes from the United States the physicians who studied medicine without ever having studied anything else except the three Rs and who spent precious little time and effort on medicine. Such men and their families, though no more a type of American medical life than are certain caricature Yankees of American society in general, are still in evidence at the meetings of the A. M. A., and are, therefore, conspicuous by their absence from the corresponding meetings across the border.

So, too, the lack of a multiplicity of sections renders it impossible for the celebrity to exist, whose valuable time allows him to emanate, but not to absorb wisdom. The chairman does not announce that the program will be suspended so that Dr. ——— may read immediately, as he must lead the discussion in another section in half an hour. Nor does the celebrity open the discussion with a brief apology that an engagement in the previous section has prevented his hearing the paper which he is about to discuss.

The exhibits at the meetings of the Canadian Medical Association are, naturally, more limited in extent, and one requires less trunk room for free samples and literature. The social features are much alike in both associations, and, indeed, it seems that the main value in such meetings is the opportunity for personal acquaintance and the informal discussions of medical work, which take place.

The visitor to another country naturally is interested in international politics and the customs which illustrate it. A citizen of the United States, always hesitates at using the word American in a narrow sense, but as the name of his own country scarely allows the formation of an adjective, our Canadian, and, indeed, other Pan-American friends, have very generously bestowed it upon us, and we might as well accept it freely as it obviates the verbose expression "Citizen of the United States." The American finds little in upper Canada that warrants the use of the word foreign. Indeed, if of British descent, the comparative absence of Germans, Italians and Poles, the lack of broken English, and the absence of foreign wares and customs, give him a feeling of home which he can not find in the average American city. With fraternal feeling for every race of mankind, deep down in every man's heart is a special affection for his own race. Blood is thicker than the ink of a naturalization paper. Two things impress the American visitor as inconsistent, at first thought, though a little reflection shows him that they are not. The first of these is the union of an intense patriotism for Canada, as an independent and free country, with an equally ardent pride in the British Empire and love of the King. The second is the hearty fraternal good will toward the United States, without the least desire for annexation of the two countries to each other. Except as they occasionally sit down with paper and pencil to figure out the selfish interests of lumbermen, farmers, sheep raisers and others who may be artificially helped by a boundary line and a tariff, all true Americans must, in common courtesy, be annexationists. One hundred and twenty-eight years ago, we invited Canada to unite with the southern colonies, and it would be unbecoming to withdraw this invitation. Still, all Americans who are not too recently immigrated, feel the bonds of our English language and take pride in the invisible empire of Anglo-Saxonism, although recognizing how incorrect the term is in the ethnologic sense. They also realize that the same results of personal freedom and mental, moral and material progress may be attained by following apparently opposite courses.

All this has nothing particular to do with the medical meeting, but applies to the popular and social impressions gathered while in attendance. The esprit de corps of the medical profession is the same, throughout the civilized world and the fraternities of art and science have no small influence in keeping nations in harmonious touch with one another.

A. L. BENEDICT, of Buffalo,
Delegate from Medical Society
of the State of New York.

THE NEW JERSEY WAY.

An esteemed correspondent sends us the following note respecting a recent meeting of the Medical Society of New Jersey at Asbury Park:

The diplomatic and skillful organizer of the American Medical Association was on hand and the Society adopted a new constitution, and fell in line with the new organization plan of the American Medical Association. The way it was done was having the discussion on it to come up at the first morning session, although, according to the program, it was not to come up until the afternoon, so when those who intended to oppose it came in the afternoon, it was all over before they knew it, being railroaded through in fine style!

The local Committee of Arrangements, as is usual at these meetings, were inexperienced and made many blunders in handling the meeting, and much harsh criticism was expressed, as they did not consider the feelings of the representatives of manufacturing houses in charge of the exhibits. They were not invited to the social functions. It will be a long time before they will want to attend another meeting at Asbury Park. The medical press should come to the rescue of representatives of manufacturing houses, for they are often not treated with proper courtesy, and the charges for exhibit space is growing more and more exorbitant, and it certainly looks a little hard that the representatives should pay the expenses of the entertainment at medical society meetings, often leaving a surplus in the Committee's hands, and then not being treated with ordinary courtesy. Many of these gentlemen are the peers in all respects of any local committee of arrangements in the land.

The scientific program was excellent. No state society could well have more interesting papers than those which were presented at this meeting.

The new President read a report on the "New Medical Practice Act," and much joy was expressed that at last Philadelphia and New York doctors could not come into the "Mosquito State" in the summer and practice.

It certainly looks queer that a physician from the great neighboring States, although he has stood their

examinations, must be examined again before he can practice in New Jersey. Reciprocity is not admitted as a desirable factor, on the contrary, exclusion—trade-unionism of the meanest sort is the watchword, and it is just this perversion of the original and only legitimate reason for medical practice laws—preventing the unqualified from imposing on the public, that will lead to the downfall in many States of all laws regulating the practice of medicine.

Your correspondent makes this prophecy and begs leave to say that such a result is inevitable. Politicians will soon see that it is not after all an honest effort "to protect the public," but a poorly masked scheme of the "ins" to keep the "outs" from getting in!

If a man is well enough qualified to practice in Philadelphia or New York, surely he is able to hold his own among the swamps and sand-dunes of New Jersey for a brief summer season, and unless this principle is recognized and handled liberally, a reaction will set in all over the country and medical practice acts will be swept off the statute books and opponents of such laws will find no better campaign material than that found in the President's paper referred to above.

C. C. F.

THE EXTERNAL USE OF THE SALICYLIC ACID IN THE TREATMENT OF DISEASES OF RHEUMATIC ORIGIN.

To the Editor of the Medical Times:—

Although the internal medication of rheumatic affections has received a large share of attention, but little has been written on the local treatment. In late years the value of hydrotherapy, mineral baths, electricity and massage in the more chronic forms of rheumatism has been well recognized. There are, however, very many patients who are unable to avail themselves of these measures and in whom it is customary to prescribe liniments, plasters and the like. These are employed either for their counter-irritant effect or for their pain-relieving qualities, but not with the idea of exerting a direct curative action upon the affected structures. The only exceptions in this respect are the various preparations containing the salicylate of methyl, including the oil of wintergreen. While these have been of some value their effect is not marked owing to the small amount of salicylic acid absorbed.

The latter part of last year an article appeared by Dr. Floret in the *Deutsche Medicinishe Wochenschrift* on a new local anti-rheumatic, a methyl oxy methyl ester of salicylic, named mesotan. It is a clear yellow fluid with only a faint odor, and dissolves in alcohol, ether, and fixed oils. That it is readily absorbed by the skin is shown by the rapid appearance of salicylic acid in the urine after its application even when lightly rubbed in. Hence, we have here to deal with a remedy which exerts a direct action upon the rheumatic joints and muscles, which may replace or, at any rate, aid the internal administration of the salicylates. As Dr. Floret's experiments related to over 120 cases and the results obtained were remarkably successful, I determined to give the preparation a trial.

From my own experience I would add the following cases:

Case I. Mrs. A. M. had for many years been a sufferer from the uric acid diathesis, being sometimes better and sometimes worse. She complained of rheumatism shifting from one part of the body to another. There was pain in the back; the muscles of the legs were very tender on pressure; her heart was weak, and she was troubled with insomnia. She felt wretched at times, and always was worse in the morning. All the various remedies indicated in such conditions had been tried. Aspirin in ten grain doses seemed to be of some benefit, but on account of her weak heart I deemed it advisable to stop its administration, and ordered mesotan. After a single application the pains were relieved for about eight hours; in the evening they recurred, and the second application of mesotan was as beneficial as the first. Its use was continued, being rubbed in gently twice daily. In ten days the patient was completely free from any pain, felt comfortable, and treatment was discontinued.

Case II. Mr. D. I., complained of severe pain and weakness in both legs, along the entire course of the sciatic nerves, and also in the knees. Clonic spasms were very pronounced, interfering frequently with sleep. The "jerking" in the muscles of both legs was more severe when sitting or lying down, and less so when moving about. His condition had always been aggravated by atmospheric changes, being particularly bad in damp weather. This case was diagnosed as chronic double sciatica of rheumatic nature. Satisfactory results not having been obtained from the various forms of treatment employed, I decided to use mesotan mixed with olive oil (25 per cent.) and ordered it to be applied with massage over the entire course of the sciatic nerves. Pain and weakness in the legs was at that time very pronounced, and the patient could walk only with extreme difficulty. The mesotan was rubbed in three times a day, and under this treatment for six days the pain subsided, the stiffness disappeared, the patient commenced to walk, and attended to his daily duties. In this case the drug acted really as a specific, affording prompt relief, and a complete cure at the end of a week.

Case III. Mrs. K. had been suffering for the last five years with chronic articular rheumatism, with swelling and stiffness of the knee and ankle joints, considerable sensitiveness to pressure, interference with the movements of the joints, also crepitating sounds in all the affected articulations. When seen she had an acute exacerbation, the temperature rising to 103 °F. Aspirin was administered internally, in 15 grain doses, three times daily. Under such treatment I was able to reduce the fever, the temperature falling to the normal in 48 hours. The pain in the joints, however, was still very severe and prevented the patient from sleeping. General frictions with mesotan and glycerine, equal parts of each, followed by bandaging of the joints, afforded immediate relief. After four days' application, twice daily, the movements of the joints were free, the swelling disappeared, and the patient reported to me that she felt comfortable, easy, and well satisfied.

Case IV. The fourth case was a member of my own family, with hereditary diathesis, his father suffering with gout, his mother with chronic rheumatism. The patient was suddenly seized with a severe attack of lumbago, and hot baths, electricity, liniments and plasters proved absolutely useless. Even the employment of morphine sulphate hypodermically did not relieve his pains. Mesotan finally was applied over the painful muscles of the back. The patient experienced first a feeling of warmth, slight tingling and burning of the skin, after which the pain subsided. This effect was

manifested in about ten minutes.

The same splendid results were obtained by me in two cases of rheumatic neuralgia, one case of torticollis, and in a number of other cases in which the existing pain was of a rheumatic or gouty origin.

The advantages of this external treatment, the freedom from disturbances of the heart and stomach, the prompt relief from pain, leads me to believe that mesotan is of special value in all rheumatic and gouty conditions, a very good local analgesic, and an efficient adjuvant to the salicylates in rheumatic fever.

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RETROSPECTIVE THERAPEUTICS.

Is Cancer Contagious?—Bossi (*Brit. Med. Journal*, April 13, 1902) answers the above question decidedly in the negative, and he bases his opinion on the results of an inquiry as to the prevalence of cancer between husbands and wives. He says that if contagion is possible or probable nowhere would it be so likely to occur as between husband and wife during coition, assuming the wife to be affected with cancer of the cervix. The conditions are in favor of ready infection, for cancer of the cervix may exist for some time without the knowledge of the patient and certainly without dispareunia (blood may follow coitus, and is sometimes the first index of the disease). The surfaces of contact are relatively large, and in a functional state ready for infection, and both tissues prone to the development of cancer. For these reasons the author thought that, if anywhere, proof of contagiousness would be found here. He accordingly selected a series of clear cases brought under his notice during the last ten years—180 in all. In no single case out of the 180 did the husband develop cancer. Further, the author wrote to several well-known gynecologists, asking their experiences in the matter. In this way he accounted for some thousands of cases, and yet was unable to find a single instance of contagion in this respect. The figures which have been published in support of the opposite view, namely, that cancer is contagious, he explains away on the theory of coincidence.

Cocain Herniotomy.—The object of Alexander Lyle's paper (*N. Y. Med. Jour.*, May 30, 1903) is to consider the various steps in the radical cure of inguinal hernia by substituting cocain anesthesia for general narcosis. Not until last June was cocain used as the selected anesthetic on a perfectly strong, healthy individual, who could, and would, have taken a general anesthetic but for the advice of his surgeon. To Dr. J. A. Bodine is due the credit for this initial boldness, and subsequent results show that he has added his mite to the ever advancing era of surgery.

The writer has performed fifteen such operations, with such gratifying results that ether and chloroform have been relegated to the past in dealing with the radical cure of inguinal hernia. A very important rule in doing cocain surgery is that any tissue that can be edematized can be cocainized. And another important point is that you can use larger quantities of cocain without danger, when you remember that in morphine we possess its perfect physiological antidote. This I have never seen more beautifully illustrated than in a baby four days old, whom the old nurse had soothed to sleep with paregoric. I was soon summoned, and finding the respirations five per minute, lost no time in giving hypodermically 1-20 grain cocain hydrochloride. Almost immediately the respiration became accelerated, and within an hour the child was in normal condition.

Paludism.—M. E. Schoull (*Jour. des Practiciens*, Jan. 3) says that even though it is proved that anopheles mosquitoes can transport and inoculate malarial poison, it must not be forgotton that the disease can be acquired in certain localities with the air as the transmitting vehicle, and that public and private measures against malaria must therefore be instituted in such places. Quinine is, of course, the best and most active measure of treatment, and intramuscular injections are the most rapid and efficacious means of introducing the drug into the system. In cases of malaria, abscesses do not follow the injections when they are made aseptically; but in other acute infectious diseases, the site of injection of quinine may be a focus for any number of abscesses. Prophylactically, small doses of quinine are sufficient, except in the cases of old sufferers from the disease, to whom larger doses must be given.

Discovery of Anesthetic Action of Yohimbin.—Magnani (*Muench. Med. Woch.; J. A. M. A.*) has recently discovered that the conjunctiva and cornea lose all sensitiveness for half an hour after instillation of a few drops of a .3 to 1 per cent. solution of yohimbin. The conjunctiva becomes hyperemic, but the pupil is not affected, in which the action differs from that of cocain. Loewy has been testing this phenomenon and describes his research in detail. The results establish that yohimbin and cocain differ possibly quantitively, but that qualitatively they are equivalent. Yohimbin in direct application is able to reduce or completely abolish the excitability and power of conduction of both motor and sensory nerves. It also induces anesthesia when applied to the terminals of the sensory nerves in the mucous membranes. This action is transient, as with cocain, and normal conditions are restored afterward. The tests included instillation of a .5 to 1 per cent. solution in distilled water or in a .9 per cent. salt solution, in the eyes of animals and man, allowing the removal of foreign bodies in the cornea in three to five minutes without pain. Tests on the nasal and buccal mucosa were equally conclusive, and also on the sciatic, vagus and sympathetic nerves exposed for a maximum of 4 cm. in rabbits and dogs and on the cervical ganglion in cats, also experimental infusion of the solution in the dural sac and application to the vasomotors of certain vascular areas.

Treatment of the Paroxysms of Whooping-cough by Pulling the Lower Jaw Downward and Forward.—Quite recently, according to an editorial note in the *Medical Age*, a method for controlling the paroxysms of whooping-cough by pulling the lower jaw downward and forward has been brought to the notice of the profession by Dr. J. Sobel, of New York. During the past two years Dr. Sobel has given this method trial in ninety-six cases. In this number there were only nine in which it proved to be ineffective. In infants and young children the method seemed less efficacious than in older ones, because, not understanding what was to be done, the little ones became frightened and their crying interfered with the manipulations. The pulling of the jaw downward and forward was observed in a number of instances to prevent the occurrence of the whoop by instantly putting an end to the paroxysm. The sim-

plicity of this procedure should recommend it to physicians in their efforts to control this very distressing symptom of whooping-cough.

Prussic Acid and Chloroform.—T. C. Stonham, M. D., in a paper on "Hydrocyanic Acid" (*Brit. Hom. Society; J. A. M. A.*), makes the following suggestion: "There is a good deal of similarity between the poisonous effects of prussic acid and chloroform. Both are protoplasmic poisons, and in sufficient strength stop the contraction of the heart; both act primarily and with great energy on the respiratory centre, and usually cause death through the respiration; both act with great rapidity,and with both the effects, if recovery takes place, are very evanescent. When on the operating table respiration ceases from an overdose of chloroform a remedy is required which is powerful, which acts speedily and which is easily administered. Besides its homeopathic relationship, HCy fulfils these conditions. A drop or two of acid hydrocyan. dil. placed at the back of the tongue would be immediately carried to the lungs by artificial respiration, and by means of its extreme diffusibility would quickly gain access to the blood and to the respiratory centres, and it would not interfere with the adoption of any other means of resuscitation. I would suggest that a bottle of HCy be placed in the theatre ready for use in the next emergency."

Truneck's Serum for Old Age.—Truneck's serum, or properly speaking, solution of a combination of inorganic drugs, was originated by Professor Truneck, of Prague, for the treatment of arteriosclerosis. The original formula is:

Sodium chloride	4.92 gm.
Sodium sulphate	0.44 gm.
Sodium carbonate	0.21 gm.
Potassium sulphate	0.40 gm.
Distilled water, q. s.	100 cc.

The principle of the treatment consists mainly in introducing into the circulation a dissolvent for calcium phosphate, which ,as is known, is the main salt found in the walls of sclerosed bloodvessels. In view of the fact that calcium phosphate is not soluble in water, but only in a solution of sodium phosphate and magnesium phosphate, which are found in normal blood-serum only in a feeble proportion, and of chloride of sodium which presents 70 per cent., Truneck conceived the idea of throwing these normal alkaline constituents into the general circulation of aged people, whose blood is relatively poor in these salts.

The clinical experiments conducted by him in a number of cases with arteriosclerosis gave him the best possible results, and these are the conclusions he arrived at: All the usual symptoms, as dyspnea, asthma, vertigo, angina pectoris, also general health and strength, are greatly benefited by this serum. This is due, in his opinion, to the excess in the blood of salts which show a favorable effect upon the process of regeneration of the vascular endothelium, which is usually altered in arteriosclerosis. Moreover, he states that the nutrition of the cardiac muscle is also greatly benefited and the heart beats become more regular. The disappearance of dyspnea he explains by the increase in the alkalinity of the blood in general and especially of the blood in the medulla, the centre of respiration.

Adrenalin in Uncontrollable Hemorrhage.—Dr. Otto Lange, of Baden-Baden, reports (*Muench. Med. Woch.*, Jan. 13, 1903) six cases of severe hemorrhage which were controlled by adrenalin. One was that of a hemopliliac who received a wound on the thumb, the bleeding from which resisted all treatment until an application of equal parts of adrenalin and normal salt solution was made, whereupon it was immediately and permanently arrested. To cases of hemorrhage caused by drainage-tubes pressing against granulation tissue in operation wounds yielded readily to the influence of adrenalin tampons, although other styptic tampons had produced only a temporary arrest of bleeding. An obstinate case of epistaxis was also controlled by packing the nares with strips of gauze soaked in adrenalin. In two instances the drug was administered internally, once in hemoptysis and once in hematemesis accompanying carcinoma. The case of hemoptysis was of three days' duration, and had resisted morphine, injections of ergotin and gelatin, but ceased after thirty drops of adrenalin had been given twice within about two hours. The case of hematemesis was controlled by a few doses of the drug.

Although not large, Lange believes that this series of cases attest the value of adrenalin in hemorrhage.

No fact, says the *International Journal of Surgery*, is more conclusively proved than the remarkable hemostatic effects of the extract and active principle of the suprarenal glands. They are more effective than the salts of iron and leave behind no filthy mess of blackened, coagulated blood. Unlike the actual cautery, their application is painless and causes no destruction of tissues. To sum up the virtues of suprarenal gland as a hemostatic, in a word, it is ideal. It has been successfully employed in every form of bleeding in which the leaking vessels are not so large as to make ligature immediately imperative. Indeed, we may well venture to term it one of the most valuable biological products that science has of late years discovered, and it is not without a certain amount of surprise that we realize how comparatively small a place it has yet assumed in that branch of emergency work which has to do with sudden and dangerous hemorrhage, which, as we all know, so often occurs in regions and under circumstances in which direct surgical means are either unavailable or impossible to adopt.

Diet After Abdominal Operations.—The importance of the after-treatment of abdominal surgical cases is insisted on by Krusen (*Intern. Med. Mag.*, Jan., 1903; *J A. M. A.*), who advises the use of one or two teaspoonfuls of hot water only, every fifteen minutes or half hour, after twelve hours, to relieve the thirst, but a still better way is to give a rectal enema of a quart of normal saline solution immediately after the operation. Food is usually administered at the end of forty-eight hours, and may be given by the rectum if the patient is feeble, before that time the first tood should be a teaspoonful of either hot weak tea, beef juice or liquid peptonoids. Milk is a bad food. Good home-made beef tea, or any of the numerous concentrated beef jellies may be given in teaspoonful quantities on the second day. Egg albumen is tasteless and nutritious. It is not advisable to give alcohol stimulants by the mouth, as hypodermics of strychnia and hyperdermoclysis of normal saline solution are better. He quotes Penrose, who advises buttermilk as one of the best foods to begin feeding the patient with. One-half to an ounce may be given every hour until the retentive power of the stomach is ascertained. When rectal nourishment is needed the surface must be cleansed from all mucus and feces and

irritation allayed as far as possible. The quantity and quality of the food should be such that it will not excite peristalis and yet allow of complete absorption. Ewald recommends the following prescription: Beat the whites of two eggs with a tablespoonful of cold water, add a teaspoonful or two of starch boiled in a half teacupful of a 20 per cent, glucose solution. Mix at a temperature below the coagulation point of the albumen. Senn has cited the use by Kummell of forced nutrition by the subcutaneous injection of sterilized olive oil under the fascia of the thigh in quantities varying from 40 to 60 grams. From the third to the seventh day, if the patient is doing well, a soft diet may be given, soft boiled eggs, milk toast, chicken, mutton or beef broth, soups, custards and jellies and usually after the first week an ordinary diet is allowable.

Diet in Rheumatism.—Jarvis (*Intern. Med. Mag.*, January, 1903; *J. A. M. A.*) sums up the diet in rheumatism as a liberal meat diet, either broiled or roasted, and served rare as being more rapidly digested. Meats should not be boiled until all the salines have been dissolved out of them. Eat carbohydrates in moderation and selected so as to avoid those likely to undergo pathologic fermentation in the digestive tube. Fats in rather small amounts. Water in plenty, and especially some between meals. Alcohol should be prohibited unless it is absolutely impracticable, and only one cup of coffee or tea allowed daily.

The Diet in Contracted Kidney.—Van Noorden (*Intern. Med. Mag.*, January, 1903; *J. A. M. A.*) believes in shielding the kidneys from irritation and first of all would exclude alcohol, as a dangerous poison. Most spices should be prohibited, not, however, including salt, vinegar and lemon juice. Coffee, tea and tobacco are injurious irritants. The common belief that white meats only should be allowed is objected to by Van Noorden, and he finds it much easier to get along with a diet selected so as to include dark meats. According to his experience, it is well to restrict the quantity of fluid to one and one-fourth liters, this to include everything taken in liquid form. He advises allowing the patient to drink as much water as he chooses one day in the week. If the disease has become incurable, there is no use in aggravating the patient by unduly restricting the diet, but over-feeding is dangerous. The amount should ordinarily be regulated to four-fifths of the calculated normal diet. As a rule nothing need be eaten between early breakfast and midday dinner but a light lunch, and nothing between dinner and supper but a few mouthfuls late in the afternoon to decrease the appetite for the two chief meals of the day to such an extent that the patient is not in danger of eating too rapidly or too much at one sitting. In more advanced stages of the disease, when the heart is beginning to grow weak, it is better to insist on a light meal every two hours.

—It is announced that Prof. Joseph Seegen proposes to offer a prize under the auspices of the Imperial Academy of Sciences in Vienna for the best answer to the following question: "Is any part of the nitrogen of the albuminates which have undergone metabolism in the animal body eliminated either by the lungs or by the skin in a gaseous form?" The prize offered amounts to about $1,000, and essays may be written in German, French or English, and must be sent in before Feb. 1, 1904.

THE CLINIQUE.

Curing Rheumatism by the Use of Milk Diet.—As the blood must be continually renewed by the food which is ingested, it is an axiom that a permanent improvement in its quality must come through dietetic and hygienic regime. Such drugs as colchicum, piperazin alkalies, salicin, salicylic acid, and iodide of potassium may eliminate or neutralize the rheumatic element, but they cannot stop its re-formation. Soups, broths and vegetables may lessen the supply of rheumatic materials, but after all cannot alter the character of the chyle. While the digestion continues defective, the fermentable product will be furnishel with each meal. Again, a profound impression upon the bowels, kidneys and skin, may suppress temporarily the symptoms, but if the primary cause remains untouched, the old factors would continue to return, until the condition becomes chronic.

Rheumatic patients have stomach and bowels, in most cases, which have been a long time disordered by the quantity and quality of the food, it would become at once necessary to restore their capacity for active work before any plan of diet can produce any decided change for the better. The digestion being due to the solvents of the food, it is scarcely necessary to show that these secretions must become normal before they can produce normal chyle.

The problem presented in the treatment of rheumatism, aside from general remedies for use in acute attacks, is to put the stomach and bowels in a healthy state, and to give as far as possible such articles of food as admit of complete digestion and assimilation. Thus the rheumatic element will not be furnished to the blood. the fermentation will not be excited, and the fever and inflammation will not return, unless the dyscrasy be implanted on some irremediable defect of the system of the patient.

Having poor success in chronic cases of rheumatism, Chapman came years ago to the belief that the primary seat of morbid action is in the chylopoietic viscera, so he attempted, while giving certain specific remedies, to eliminate the products of fermentation by the skin, bowels and kidneys, to correct the gastro-intestinal secretions, and improve the quality of the chyle. This was a great advance in treatment. To do this he prescribed laxatives, with or without calomel, until the secretions were corrected, and allowed the ingestion of simple unirritating articles of food only. He avoided tonics, and made the patient's strength depend upon a more complete digestion and assimilation. He was forced to do this as he found that alcohol, iron, meat-broths, and everything else of a bracing nature, such as are used in other cases of convalescence, seemed to aggravate the disease, and increase the fermentation. Consequently, as the bloodless, nerveless patient gained little nutriment from gruels and farinaceous articles, and little strength from bitters and quinine, the recovery was always slow, the tendency to relapse always present, and a fresh attack always imminent. With the use of milk with lime-water, however, as almost the sole article of diet in febrile affections, the void in alimentation and medication has been filled, and while eliminating the uric acid from the system, been enabled to prevent its re-formation and supply the blood with all the elements of nutrition at one and the same time. The milk being unstimulating and very digestible, the gastro-duodenal mucous membrane returned to a healthy state,

so that perfect chyle was elaborated; and, containing all the elements of nutrition, the assimilation regained its activity, so that the uric acid was no longer generated in excess. A healthy nutrition being thus established, and the blood and nerve forces sustained by a diet that is both food and medicine, the progress to recovery became steady and uninterrupted. What is more, the "milk-diet" not only obviated the tendency to chronic stiffness of the joints and muscles, but, also the tendency to a return of the condition.

Now that we have salicin and the salicylates to aid the alkalies, and vegetable acids in eliminating the diseased material and milk to restore the digestion and assimilation, there seems to be no lack of means to secure a prompt recovery from acute or chronic rheumatism, and a long release from future attacks. In acute cases, give calomel as a purgative, morphia as an anodyne, Rochelle Salt in lemonade as a laxative and diuretic, and from ninety to a hundred grains of salicin daily until the fever and pain abate. This while the patient takes six tablespoonfuls of milk, with one tablespoonful of lime-water, every three hours. That the gastro-duodenal mucous membrane may regain its healthy state, and the digestion be fully restored, every other article of diet must be rigidly excluded.

Thus treated, the pain in three or four days leaves the joints, although the limbs still continue as swollen and motionless as at first. Now, all that remains is to regain the nervous power and the muscular force. This may be accomplished by gentle means, without any fear of relighting the disease, for the enemy has been routed from the system, and nothing remains but to repair the damage he has inflicted.

When the above remedies, reinforced by quinine, has been used, as the occasion may demand, for some days, and when the milk, reinforced first by farinaceous articles, and later by fresh meat at dinner, has been taken for some months, have seen the rheumatic element seemingly eradicated, at least has been a long respite to persons who had previously been constant or frequent sufferers.

The following case is an interesting one in this connection. A young woman had had articular rheumatism when a child. Some years later it seized her in the winter, kept her two months in her room,and left her weak, anæmic and crippled. She made a complete recovery by the liberal use of the warm weather and country air. After she had her several children she was attacked again with a high fever and excruciating pain in the shoulder joints. Her sufferings were so severe that morphia failed to afford her any relief the first forty-eight hours. During this time she took Rochelle Salt freely, and nearly two hundred grains of salicin. The pills were put up in capsules, and two given every two hours. The pain becoming more tolerable, she was given a purgative dose of calomel. Subsequently, the salt and salicin were reduced, and eventually supplanted them with quinia and cinchonia. The pain and swelling in the shoulders rapidly extended to the other joints; but, what is peculiar, all the affected parts improved simultaneously, and none were attacked a second time. In less than a week there was neither fever nor pain; but the limbs were powerless and the joints swollen. In less than two weeks she was out of bed and hobbling about the room without inconvenience, further than that occasioned by her clumsiness. All this while she lived on milk exclusively; and, thereafter, for the eleven months during which she continued to nurse the baby, she made it the main article of her diet. In less than three weeks the recovery was complete— a marked contrast to the previous attack in which salicin and milk were not employed. She now is hardy and vigorous; weighs 140 pounds does a good deal of hard work besides taking care of the baby, and has had no return of her old complaint. This is a great change from her former condition. Then her weight was never above 110 pounds; and lactation so reduced her as to necessitate the weaning of her first child.

Another case, an old man has had rheumatism since childhood, when he had an acute attack, and he has, at various times, been confined to the house for weeks together. His hands were swollen and useless, and his muscles and joints stiff and painful on examination. Besides, he was affected with hypertrophy and valvular disease of the heart, enlargement of the prostate gland, frequent and difficult urination, and gastric and intestinal disorders. His food, which he relished and partook of liberally, had consisted of meat, bread and potatoes almost exclusively.

The previous two months he had been out of doors whenever the weather permitted, and had been relieved, except a dull pain in the shoulders, of the rheumatic feelings. He had free use of his hands, and his health was far better than is common at his time of life. In this case the restriction of his diet to milk, farinaceous articles, and acid fruits, except at dinner, when meat was allowed in moderation, neither impaired muscular power nor depressed nervous energy, even at this advanced age, but, on the contrary, so quickened the digestion and assimilation, renewed the secretions and excretions, and stimulated the nerves and arteries, that this old man resumed active exercise in the open air, and passed his days and nights in comparative comfort. Certainly milk, qualified by lime, must be highly digestible and nutritious; even more so than all other articles combined, if it be capable of sustaining and strengthening the human frame after its vital mechanism has been nearly worn out by time and disease.

A boy, aged 16, came under notice in a cold spring month. In his fifth year he had had intermittent fever, which, when eventually subdued, left him so weak and bloodless that anasarca supervined. From this poverty of the blood his recovery was imperfect, his face remaining pale, his nutrition bad, his flesh flabby and his vigor deficient; yet he ate well, especially of animal foods.

Two years before articular rheumatism showed itself, and, thereafter continued to recur at longer or shorter intervals, with general excitement, and local pain and swelling. At all times there was stiffness of one or more joints, particularly of the ankles, and an imminence of fresh relighting of the inflammatory symptoms. He had been ordered a great variety of specific remedies, those supposed to be effective in the elimination of the morbific matter from the system, but he had been permitted to follow his own inclinations in the choice of his food, which was always rich and nutritious, and often oppressive and indigestible. Hence, as fancy and appetite were the only guides to the kind of material furnished to the blood, the fermentation went on, and the inflammation, every now and then, lighted its fires anew.

He was given a purgative dose of calomel, and ordered an exclusive diet of milk with lime-water. The mercurial having been repeated, in two or three days Rochelle salt and lemonade were prescribed for the

double purpose of a laxative and diuretic. In a few days, when the excitement had somewhat abated, crackers, bread, potatoes and clam-broth were forbidden until the recovery should be well assured.

Soon a change for the better was noticeable. The digestion became perfect, the movement natural, the urine clear, and the assimilation active. As the nutritive functions regained their sway, the pain left the joints and the strength returned.

For some months after recovery, the dietary consisted of milk, bread, oatmeal, or wheaten grits for breakfast; fresh meat, bread, potatoes and fruit for dinner; and milk, bread, crackers and gingerbread for supper. Any unusual appetite was appeased by milk in the forenoon and in the evening. Acid fruits were allowed at any time of the day.

A steady use of milk and vegetables had, by cutting off the supply of the rheumatic elements, revolutionized the system of the patients, removed the uric acid diathesis, and given another start to the economy.

Autopsy in an Interesting Case of Typhoid Fever.—R. B., aged 38, was admitted in October to the medical wards. Father died some years ago, probably of apoplexy; his mother is living and well; his brothers and sisters living and well. Maternal aunt died of tuberculosis. He had had the usual children's diseases, including scarlet fever. He has never used much liquor or tobacco. He has in the past occasionally suffered from colds, but they did not last long; in fact, he had never had any serious illness since childhood, until the present disease. A short time before admission to the hospital he had suffered from the usual symptoms of the onset of typhoid, as we know, which may be contracted from drinking water or from milk, from improperly cleaned tin cans, or from milk diluted with water that has not been sterilized.

Late in September he became decidedly ill; prior to that time he had the usual prodromes of typhoid, such as headache, symptoms of a cold, coughing, and creeping as of malaria, muscular pains affecting every part of the body. This was a case not unlike influenza, and we not unusually see this onset of typhoid. He did not go to bed, and did not take to bed for a day or two after being sent to the hospital. Patients frequently keep up and walk about for some time before taking to bed in this disease. He first experienced marked fever and chilliness, as is usual. On admission the pulse was weak, and had the characteristic features of typhoid; there were a few moist rales; appetite was gone; thirst was great; tongue coated; coated, but not everywhere, for the tips and edges everywhere began to clean off. The eruption was present on the abdomen; hence the patient must have reached the eighth day. The spleen was decidedly enlarged at the time of admission. The diagnosis was beyond question almost immediately after he was admitted. Before admission the temperature was high; after admission it went up to 104 3-5, then to 104 4-5; there was a slight nocturnal remission, then just before death he had a marked hyperpyrexia, and the temperature touched 107 degrees. Remember that. In typhoid fever we very often have that marked elevation of temperature just before dissolution. He had previously had a temperature of 105; so that there we have had marked hyperpyrexia. The pulse should be slow in proportion to the fever; and this was the case in the first week, but in the second week it became frequent, 116, then 120; then it went up so that it could not be counted. This is apt to come on in the third week as the result of extreme debility. We may have the rapid pulse as a temporary affair any time during typhoid; it may be the result of excitement, but then it usually does not last long, or of exertion. It is simply dangerous or serious in character when it persists for days, and when the tendency is to rise higher and higher. We do not find active or violent delirium; simply delirium of the usual type at night, marked mental hebetude when admitted; stupor or soporose condition. The nervous conditions were not so serious, as tremor of the tongue, tremor of the extremities. He had a little twitching of the muscles. These symptoms show the type of infection to be severe. I would like you to bear that in mind. There was no hemorrhage until a few hours before his death; but they appeared in his stools a couple of hours before death. He had had the characterised eruption over the trunk consisting of a few rose colored spots; purpuric spots over the body, growing into large ecchymotic patches. Hemorrhage from the intestines must have been a particular or systematic or hemorrhage diahtesis. The lungs did not show anything in particular.

Before showing you the specimens I will go over the postmortem notes. The autopsy was held October 16, about ten hours after death of the patient. The remarks are of considerable interest. The ventricles of the heart were empty; the right auricle was distended with blood. This was a case in which the heart gave out suddenly; the extreme general debility led to the cardiac weakness and cardiac failure.

The right lung showed in the lower lobe marked areas of varying size of dark purplish color. These areas did not bleed very freely, but were intensely red. I suppose them to be from the early stages of catarrhal pneumonia. When the heart grows more and more frequent it indicates pulmonary complications, and may even justify the diagnosis of lobular pneumonia. Spleen and omentum were adherent, and beneath this attachment was an infarct, which not infrequently occurs in typhoid, and this extended into the tissues forming wads. The peritoneum had become adherent; the spleen was at first enlarged about the width of a man's hand; though thicker, it was soft, not so soft as is usual and not mushy.

Both kidneys showed some degeneration. This is usual also in all infectious diseases. The pancreas was normal, biliary duct normal, stomach normal, in fatal cases that may lead to perforation; no inflammation of the gall bladder.

In the small intestines were lesions which I can show you. These are of special interest in the study of typhoid fever. In the ilium you see we have small ulcers; here at the ileo-coecal valve we find large ulcers; here you see are sloughs not yet separated. The larger patches you see here are Pyers patches. The little glands you see in the upper part (here) are infiltrated; then lower down you see the crusts have become partly separated. These you may remember, do not all become necrotic, but those near the lower end of the ilium are apt to do so. The stage of infiltration ends on the eighth or tenth day; then this necrotic process eight to ten days more, near the end of the third week. This necrotic process usually begins at the periphery and tends towards the centre. The base of these ulcers is the submucous coat. You may also remember that near the end, near the valve, the ulcers are apt to coalesce and form large areas.

Marked tympany was absent in this case. There are some deep ulcers near the right edge. The reason we did not have diarrhœ in this case is that the colon was not affected below the cœcum.

What are the unfavorable conditions? What was the immediate cause of death in this particular case? In this case we have had every indication of a severe type of typhoid fever. There was the high temperature, tendency to hyperpyrexia, pulse was from the very beginning feeble, compressible, and had become later distinct and more and more frequent. These point to the gradual failure of the cardiac forces, and this is also an indication of a severe type of infection in connection with this disease. We have here the presence of unfavorable nervous manifestations from the very beginning, plastidium in form. Note carefully these points, the temperature, the condition of the nervous system, and the condition of the heart. Severe types of infection then are these in which we have more and more rapid pulse than ordinary, motor irritation, growing weaker and weaker with the progress of the disease. Another consideration is the absence or presence of complications. These complications are apt to occur after the third week; this is the dangerous period; this was the case here. Hemorrhage occurred an hour before death; we had here a partial development of bronchofatal termination; perforation of the bowels may occur pneumonia that probably had nothing to do with the and end fatally, but that did not happen in this case. The other accident to which I wish to call special attention is the sudden cardiac collapse; sudden collapse of the circulation. High temperature is not always a fatal symptom; it may be the result of an infectious process, and not the cause of the danger itself; especially did we have in this case the thermo-toxic condition; it increased the cardiac weakness which was accompanied by hyperpyrexia, which was probably the immediate cause of death.

Another Mosquito Disease?—According to Dr. Graham of Beirut, another disease is to be set down against the mosquito, namely, dengue fever, variously called African fever, break-bone fever, giraffe fever, dandy fever, etc. The disease is an acute eruptive fever, rarely fatal, but leaving various disagreeable sequelæ—paralysis, insomnia, marked mental and physical prostration, etc. It occurs in hot climates, and in the southern States during the last fifty years several serious epidemics have occurred.

Dr. Graham found that he could regularly produce an attack of dengue in a non-immune by submitting the latter to the attack of mosquitoes which had fed on sufferers from the disease. In one experiment he carried dengue-infected mosquitoes to a mountain town 3,000 feet in altitude, where there were no mosquitoes and no dengue. One of the natives was shut up in the room with the mosquitoes, and on the fourth day came down with a sharp attack of dengue, and a second presented the typical symptoms on the fifth day. The mosquitoes were immediately destroyed, and no further cases occurred.

Dr. Graham also claims to have discovered the germ which causes dengue in both human blood and the stomach of the mosquito. It resembles some forms of the malarial parasite.

It is a curious fact that flies will not pass through netting even though the meshes be quite large unless there be a source of light, as from a window, behind it. Thus, in rooms with windows only on one side a net over the window will absolutely keep the flies out, although the meshes of the net may be an inch apart.

A Medical Defence of Corsets.—The use of the corset, (*Medical Press and Circular*) is to transmit the pressure of the skirt bands to the hips and the ribs, and so to protect from their pressure the organs in the region of the waist. The conclusion is, that so long as skirt bands are fastened round the waist, corsets should be worn. They should be stiffer than those usually made if they are effectively to protect the soft, middle portion of the body from the pressure of the waistband. The front should be quite straight, and the waist measurement should be at least as large as the wearer's waist, measured over a single soft garment. The abuse of the article consists in employing it as a means of compressing that which it was meant to protect from compressing, namely, the soft, middle portion of the body. Fashion in corsets has of late made a motion in the right direction, in the straight, stiff front.

A Century of Arm-to-Arm Vaccination.—Eduardo Liceaga (*Indiana Med. Journal*) describes the method of arm-to-arm vaccination which has been practiced for 100 years in Mexico, the greatest care having been exercised as to the choice of candidates for propagating the virus. As to the results, it has been observed, in the first place, that persons vaccinated in this way remain immune during their whole lives. When there is a widespread epidemic it is stopped in no time by at once vaccinating all persons who have not been previously so treated. The immunity which vaccination confers on infants is preserved during the whole of their lives. No Mexican physician has ever died of smallpox, even if he has been in practice for forty years. The same immunity has been observed in male and female nurses who attend smallpox patients. Experiments undertaken by order of the Supreme Board of Health of the city of Mexico show that vaccinations succeeded exceptionally wel Of 1307 revaccinations only 23 were successful.

UNIVERSITY OF THE STATE OF NEW YORK.

Examination in Anatomy.

1. What is areolar tissue and where is it found?
2. Give the minute anatomy of muscular tissue.
3. Make a classification of the bones of the body, giving an example of each class.
4. Mention *five* muscles of the forearm. Give the origin and insertion of *one* of the muscles mentioned.
5. Mention the branches given off from the arch of the aorta.
6. Give the origin, course, branches and distribution of the great sciatic nerve.
7. Mention the veins found in the neck and describe *one* of them.
8. Give the gross anatomy of the ear.
9. Describe the bladder and give its nerve supply.
10. Give the relations of the pancreas. What is the course of the pancreatic duct?
11. In destruction of the posterior thoracic nerve, what muscular functions would be lost.
12. What are the Pacchionian depressions? State where these depressions are found.
13. Describe the pericardium.
14. Give the anatomy of the trachea and of the bronchi.
15. Describe the ovaries and give their relations.

MISCELLANY.

—By a recent act of the Ithaca Board of Health it is made a misdemeanor punishable by $50 fine or fifty days in jail for any one to drink unboiled water or to furnish it to others for that purpose.

—Dr. Gruning, a young Russian doctor of great promise, has lost his life through being bitten by a little boy whose sufferings from diphtheria he was heroically trying to relieve.

—Professor Zimmer, of Berlin, has come to the conclusion that if women are admitted into competition with men the inevitable result will be a tremendous increase of insanity among the women.

—Four brothers, who, by their own efforts raised themselves from weavers to qualified medical practitioners, have given a public entertainment to the aged of their native town of Idle, Yorkshire.

—Immediate amputation of an injured member is now seldom performed. Control hemorrhage, dress antiseptically and await reaction.

—A new polyclinic for the treatment of children's diseases was opened last Friday in one of the poor quarters of Paris. It has been built by Dr. H. De Rothschild, a member of the millionaire family of that name. The institute is to include a library containing 10,000 volumes on children's diseases.

—For epistaxis, says Dr. J. S. Brunner (*Med. World*), "wet a towel in cold water and apply to the scrotum and contiguous organs; answers equally well applied to the female genitals. Don't laugh at this, but try it the first opportunity."

—Dr. Florence R. Sabin, of Baltimore has been awarded the prize of $1,000 offered two years ago for the best work of scientific research by women. Her communication was a study of the lymphatic system.

—The first medical college for women in China has recently been opened at Canton. The pupils now number 13, and 60 young Chinese women are preparing for entrance next year.

—The dean of the medical profession in France, Dr. Jean David, of Montpellier, celebrated his 102d birthday February 10. He retired from practice at 98, but still takes his daily stroll and regular meals. He has an especial reputation for the treatment of anthrax, and patients still come from a distance to consult him.

—The Commissioner of Health of the City of New York has announced in interviews in the daily press that he expects that the department will have ready for the coming season a curative serum for the treatment of cholera infantum. It stated that the serum is practically ready now.

—The Hamburg Exposition of Milk Hygiene offers thirty-one prizes for the best method of cleaning bottles, for the best contribution on the subject of modifying milk for infants, etc.; also for popularly worded pamphlets on these subjects. The prizes range from $125 downward.

—For the prevention of conception, when indicated by reason of diseases of the heart, tuberculosis, etc., Ginzburg (*Praktitchesky Vratch*, Vol. 1, No. 50, 1902) recommends the use of tampons saturated with a three per cent solution of carbolic acid in glycerine. The spermatozoa are entangled in the cotton and promptly killed by the glycerine.

—In view of the fact that formaldehyde is coming more and more into general use as a disinfectant, cases of poisoning from it, says *Merck's Archives*, will become more frequent. We have an easily accessible antidote in ammonia. It may be given in the form of ammonia-water (a few drops well diluted), or the aromatic spirit, or a solution of ammonium acetate.

—Prof. Hans Molisch, of Prague, believes he has discovered a use for bacteria in a mining lamp. The lamp consists of a glass jar in which there is a lining of potassium nitrate and gelatin previously inoculated with bacteria. The latter multiply enormously in two days, causing the jar to become illuminated with a bluish green light. This lasts brilliantly for several days, gradually dimming until it disappears in from two to three weeks. It is stated that the lamp thus provided is suitable for mines, powder magazines, and other places where explosives are likely to be kept.

—Mrs. Alma A. Williston, M. D., by a vote of 12 to 3, has been appointed municipal physician by the Town Council of Phillipsburg, Warren County, being probably the first woman doctor to be employed by municipal authorities in New Jersey. Her rivals were the two former physicians, whose salary was $200 a year. Dr. Williston's salary was fixed at $300. In addition, the Council will provide her with an automobile and will allow her $100 for medicines.

—M. Hachet Souplet, at the last meeting of the Societe D'Hypnologie et de Physiologie, in Paris, spoke of the intoxicating effect of rapid motor locomotion. The mental and moral state of the driver becomes abnormal. He grows vindictive, furiously aggressive, and lets himself be carried away by the angry impulse of the monment. The high rate of speed works him up into the very same state of mind which makes the habitual drinker of alcohol regardless of consequences. Both abuse, swear and use vile language. The beast is let loose as much in the motorist whose pace is checked, as in the drunkard in a combative mood.

—The first case in which it has been positively determined during life that true hermaphroditism was present is said to be that observed by Garre (*D. Med. Woch.*, Jan. 20), in a person of 20. It was impossible to ascertain the sex, and since this was a matter of importance operation was undertaken, and an object that seemed like the ovary and tube was extirpated, as were also portions of what was apparently a testicle. Microscopical examination showed that the tissue removed were actually portions of the ovary and testicle. The latter showed no evidence of spermatogenesis.

—"In all my experience as a physician I have not seen more than a dozen men or women who have been improved morally by long-continued suffering. Acute illness and illness which brings the patient close to death often have a beneficial effect upon the disposition, but I cannot agree with the assertion which we frequently hear made in the pulpit that suffering is usually the means of refining. I have seen a few isolated cases in which this was so, but it is not the rule by any means. The chronic invalid is almost invariably selfish and peevish, and it is a hard task to find a nurse who can stand the strain of such a service."

—Boxes containing supplies to aid persons accidentally injured are to be established all through Paris. The apparatus resembles a lamp-post letter box, and it contains a small medicine chest, a folding stretcher and a telephone for signalling the nearest ambulance station. Access to the box is gained by breaking a glass panel.

THE SPECIAL QUALIFICATIONS OF A PHYSICIAN AS A LIFE INSURANCE EXAMINER.

BY J. T. PRATT, M.D., PHILADELPHIA.

IT is upon the medical department of a life insurance company that the selection of risks must devolve, therefore, the examiner is the corner stone upon which the super-structure is built. He is more than a mere examiner, for he is the confidential employé of the company, whose duty it is to give them an honest opinion upon which to base their decisions.

Keating has stated, in a graphic way, that he is the photographer who is to give a lifelike picture of the applicant for a policy in his company, making the resemblance as lifelike as possible, neither exaggerating the defects, nor lessening their importance, and completing his work by a statement of the estimate which he places upon the facts which have been discovered by him. There are two factors which enter into the consideration of the medical examiner. First—To whom is the medical examiner responsible, and second, what are his duties? The medical examiner is something like the special agent in a fire insurance company, that is, he is a check which should restrain the acceptance of bad risks. The agent, of course, is working to get all the risks accepted. He realizes that it is not well for the company to be loaded with bad risks, but he wants the loss of risks to fall upon some one else, therefore, the medical examiner should be under obligation to no one but the company itself. It is well that he should not be the family physician of the applicant. If the examiner does work for several companies he should be particularly careful to avoid any appearance of partiality. He must remember that when he is called upon by a patient he is expected to be of assistance in locating the disease and administering treatment, but his position in a life insurance company is the opposite, for the applicant either considers himself healthy, or wants to be considered so, therefore, he minimizes as much as possible, or suppresses entirely any facts or symptoms which he feels may not be of assistance to him.

From time to time it is claimed by writers on the subject of life insurance that too much importance is attached to the medical examination, but it has been found in actual practice that when a company has a reputation for carelessness in medical selection, it is at once made the dumping ground for all discarded risks. Each company, as a rule, has its policy, and the examiner should be thoroughly familiar with its details and should report in accordance with the custom of his company. Of course, there are a few companies who take sub-standard risks, that is, risks which are not acceptable to every company. Undoubtedly, as medical science advances, these can be increased, for many risks which would not bear a strict medical examination are still more or less insurable.

The universality of life insurance is undoubtedly growing. Some years ago, for example, there were 100,000 policies in force in England, averaging $2000 each to the policy, while in Germany there were 70,000 policies averaging $1200 each, and in France there were some 40,000 policies averaging about $2500, while in New York alone there were 140,000 policies averaging $3000 to the policy. These, of course, have been considerably increased in the last six or eight years.

Some years ago Keating brought out the thought that if the insurance companies could regulate their premium tables to suit the mortality of the various sections of the country, then the study of the statistics of these localities would be of very great importance. Unfortunately, however, the population of our country is to a great extent migratory, and an American, as soon as he has received his insurance policy wants to be allowed to live in any section of the country which he may select. Therefore it is not possible to take any local average of mortality as a basis, but we must depend upon the general average of mortality. It has been discovered that the expectation of life in certain localities is less than in others.

The progress of medicine, the more equalized distribution of wealth, and the increased knowledge of hygiene, has lessened mortality by increasing the expectation of life. For example, the introduction of vaccination alone has done much toward this end. In Sweden alone from 1749 to 1801 there were three hundred thousand cases of small-pox; in one thousand inhabitants there were twenty-eight deaths from this disease when vaccination was made compulsory in 1815, only one and a half persons died of this disease per thousand. "Ogle finds that in England the probability of male life, as for the years 1871 to 1880, increased up to the sixty-seventh year, and only from this forward has it decreased. As far as regards the female sex, the condition has improved up to the ninety-second year, and for the entire population up to the eighty-seventh year, so that a decided improvement for the proportion has taken place, and these statistics are extremely interesting, yet they can not be of service to insurance companies, for the average company must depend on very careful selection of risks by the examiners."

An insurance company should endeavor, as far as possible, to select its lives from the average class of human beings. English statistics have apparently shown that the mortality is less in that country among moderate drinkers than among the teetotalers. The explanation of this fact is that the moderate drinkers form the largest class of England, and probably their moderation in this line shows their moderation in other things, throwing them into the class of the least mortality. The great problem is to decide the exact amount of alcohol which an individual takes, for there is no more difficult problem to solve in the whole of insurance than to know what moderate drinking is. In the writer's experience he has never met a man who was willing to acknowledge he was a hard drinker. Therefore, shall we take the candidate's opinion, or the opinion of the examiner, or the general reputation that the applicant has among his neighbors? The examiner should first carefully investigate the effect that alcohol may have had upon the system of the applicant. Are his functions normal; his skin bright and clear? Are there any evidences of bilious derangement, coated tongue, nervous disturbance? The applicant can be made to acknowledge the character and extent of his beverages if carefully handled. Does he drink between meals? Does he drink in the morning? Refuse a policy to one who acknowledges drinking before breakfast. Keating points out that such a candidate has intemperate habits. The same question of the use of narcotic drugs should be most carefully investigated.

The examination of the urine has several elements; in the first place the ability of the examiner; (2) the

nature of the discovery; (3) age of the individual and his previous record; (4) causes of the mortality of the individual company as known only at the home office, which requires lives to be selected so as to avoid certain tendencies. To illustrate, there are some companies, whose mortality sheets seem to run in the line of kidney troubles, from rheumatic or gouty sources. Here it is necessary to be cautious in order to remove, if possible, this particular tendency. Every life insurance examiner must be able to detect the presence of albumen and sugar and to differentiate between stimulated appearances. The appearances of urine under the microscope must also be familiar to him. Unless this is so his services to the company are of no importance. He must be extremely particular in regard to the cleanliness of all his utensils and the reliability of his reagents. He must satisfy himself of the fact that the urine presented to him is that passed by the individual in order to avoid suspicion of fraud. His examination must be thoroughly reliable and dependable. Stewart's conclusions on albumen may also be considered as true of sugar, though possibly many very slight disturbances, insignificant in themselves, will produce a trace of sugar in the urine that will appear and be of no consequence.

"1. There is no sufficient proof that albumen is normally discharged from the human kidneys.

"2. That albuminuria is much more common among presumably healthy people than was formerly supposed, being demonstrable by delicate tests in nearly one-third of those examined.

"3. That the existence of the albuminuria is not of itself a sufficient ground for the rejection of a proposal for life insurance.

"4. That traces of albumen are not infrequently present in urine passed during the first days of life.

"5. That, excepting as shown above, the frequency of albuminuria increases as life advances, being rare in children and young adults, and common in men at or above sixty years of age.

"6. That is more common among those whose occupations involve arduous bodily exercise than among those who have easy work.

"7. That albuminuria frequently follows the taking of food, especially of breakfast.

"8. That moderate muscular effort rather diminishes than increases albuminuria, except in rare cases.

"9. That violent or prolonged exertion often induces albuminuria.

"10. That cold bathing produces or increases it in some individuals.

"11. That the discharge of peptones from the kidneys is exceedingly rare in the presumably healthy."

Tyson, the well-known urinary expert, reaches the following conclusions:

"1. The applicant must in all other respects present the signs of good health.

"2. The albuminuria should be unaccompanied by tube-casts. Casts and albuminuria conjoined can receive only one interpretation, structural change in the kidney, either acute or chronic.

"3. If the quantity of the albumen is large the applicant should be rejected, irrespective of the presence of casts, where it habitually exceeds one-fifth the bulk of the specimen examined.

"4. A consideration which goes far toward establishing the functional character of an albuminuria, although not essential to this end, is the absence of albumen on rising in the morning. It must be taken in connection with the other considerations mentioned.

"5. A point of importance is the specific gravity of the twenty-four hours' urine. If we regard the specific gravity of a normal twenty-four hours' urine (say fifty ounces) as 1020 the following may be laid down: Albuminuria is least significant when specific gravity is high, throwing out, of course, the consideration of sugar.

"6. The signs of hypertrophy of the left ventricle and of high vascular tension associated with albuminuria are conclusive symptoms of renal disease, and should exclude candidate.

"7. A highly important consideration is the age of the candidate. It is questionable whether any person with seemingly functional albuminuria who has reached the age of forty should be accepted unless he has been under long observation by a competent and conscientious observer.

"8. The presence of true gout in any shape precludes admission to life insurance, being always sooner or later followed by interstitial nephritis.

"9. The retinal symptoms so commonly associated with chronic Bright's disease, although usually late in their appearance, do sometimes form the earliest noted sign of this affection, and whether or not conjoined with albuminuria must effectually exclude the candidate from its advantages."

Hall, according to Keating, probably appreciates the question of albuminuria from the standpoint of the insurance company more correctly. In his article upon this subject, he quotes the sentence in Stewart's article, "that there is no sufficient proof that albumen is normally discharged from the human kidney." This question, then, is not, "Is albuminuria always an evidence of renal disease?" but, "Is the presence of albumen, even in the slighest tracing, in urine that has no other abnormal characteristic ever an evidence of ill health?" Any one, I am sure, who has had anything to do with life insurance will at once say that in a large number of cases it is simply a temporary derangement, of no more pathological consequence than an ordinary cold in the head or a bronchial catarrh, and has the same consequence as these; but for the time being the applicant is not insurable.

"The standard of the insurance company, based upon its mortality record of healthy lives, requires attention paid to these early symptoms, which may or may not be of any consequence, and, though a simple laryngitis or bronchitis may in nine cases out of the ten be of no consequence whatever, the tenth case may be an evidence of some pulmonary trouble, acute or chronic; so in albuminuria, often when detected by the insurance examiner, it may be the first evidence of some morbid condition which would otherwise pass unnoticed."

Stokvis is of the opinion that albuminuria is never physiological. He believes that intermittent albuminuria is generally extra renal in its origin, while at the same time, he acknowledges that many cases of albuminuria are curable, and that it is necessary to depend upon microscopic examination of the urine to determine the cause of the albuminuria and the morbid symptoms associated with it and also to diagnose true renal albuminuria from extra renal forms.

A large insurance company some years ago found that scarcely ten per cent. of their deaths came from kidney trouble, while careful study shows on the

other hand that eleven per cent. of the persons presenting themselves for life insurance, otherwise in a healthy condition, showed albumen in the urine. Carefully following up these cases there was found that sixty-nine cases in which albuminuria was found four died shortly after, and that many of the others showed deviations from the normal.

There should be some standard tests adopted by all companies which would forever settle the question of the presence or absence of albumen, and also of sugar. Boiling aciduated urine after it has been filtered, and applying the cold nitric acid test besides, are excellent procedures. The urine after a heavy meal should not be examined, nor should be tested for an hour after being passed and the specific gravity should always be taken. Greater difficulty attends the detection of sugar, and its pathological significance in very small amounts make this question more difficult. Very minute traces of sugar may not be of sufficient importance to be taken into consideration in a question of insurance, but for large amounts of sugar there should be a standard test, and none is better than Fehling's test, prepared freshly each time; if sugar has been detected, the fermentation test should be used in addition. The specific gravity in these cases is, of course, very important, though sugar has been present with low specific gravity in some cases.

When albumen or sugar is found the case should be refused insurance until it has been positively ascertained that there is no pathological significance in the symptom, and that it has been of only a temporary character. It would be well to postpone the examination for a year. If the applicant is over fifty, the company if insuring him at all, should make a high rate.

Baker, in his paper based upon fifty post-mortems, has showed that it is most unadvisable to issue policies, except upon very high rates, to persons suffering from chronic suppuration of the middle ear. He summarizes as follows:

"1. Cases which may be accepted provisionally, i. e., with an increased premium. Cases in which the purulent discharge has never been abundant or offensive or bloody; where the aural canal is of large size and free from all obstruction, and there is or has been no tenderness of long duration behind, above, or in front of the ear, no long-continued pain, giddiness, or other severe symptoms of intracranial difficulty, and in which there has been no discharge for one year or more.

"2. Cases which may not be rejected absolutely, but deferred until the affection is removed.

"3. Cases which should be rejected unconditionally: (1) all cases in which examination reveals a narrowing of the canal from exostoses or other causes; (2) all cases in which there are present polypi or granulations within the tympanic cavity; (3) all cases in which there are desquamative processes within the middle ear or external meatus; (4) all cases with symptoms of caries or necrosis of the temporal bone; (5) all cases with paresis or paralysis of the facial nerves; (6) all cases with fistula of the mastoid cells; (7) all cases in which there is an abundant offensive discharge from the ear of long duration, and especially if bloody at times; (8) all cases in which there is tenderness or pressure or recurrent pain behind, above, or in front of the ear; (9) all cases in which there is giddiness, unsteadiness of gait, or other symptoms of cerebral disturbance."

The applicant must retain only the shirt next to the skin to make a proper examination of the chest. Nor should there be tight bands restricting the action of the abdominal muscles. The chest should be allowed full play, as far as its expansion is concerned, and there should be nothing to interfere with a thorough investigation of all of it. The apices should be first carefully auscultated in order to test the amount of air that goes into them and the character of its entrance and exit. This examination of the apices is most important, both from the anterior portion of the chest and from the posterior. Place the applicant with his heels close to the washboard and with his back against some firm surface, such as the wall; the chest will then be thrown out so that upon percussion the sounds will be plain and clear.

The common source of troubles to the examiner is the uncertainty of the family record of the average American. It is sometimes astonishing. Intermarriage, insufficient statistics, in fact, none at all in many cases, the large proportion of insures, or certainly their fathers before them, being immigrants; the great mixture of races, which possibly also to a certain extent will influence our table of longevity one hundred years to come, the little interest which is taken in this subject by people generally, and, more than all, the uncertainty as to cause of death, make family history farther back than the parents, generally, absolutely worthless. The age and the length of the illness are great guides as to tendencies. If a grandparent is reported to have died at the age of thirty, and the family history shows an illness of some duration, probably a chronic pulmonary disease was the cause. Sudden death at middle age would naturally point to heart disease or apoplexy. As it is, in the selection of lives we are obliged to consider simply the question of the age at death and the probable effect on the individual from any disease which is constitutional and which tradition has impressed upon the family.

The question of insanity is also important, for insanity not only shortens life in itself, but the great tendency to suicide and the fact that most companies have divested their policies from all restriction of this character must be remembered.

Inquire into the family record and satisfy yourself that there is no family taint of this character. The importance of constitutional disease upon expectation of life is little considered. For instance, the inheritance of gout is considered simply of importance when it shows itself in the usual gouty signs in the smaller joints, and when these are not manifested the individual considers himself as having escaped, little knowing how important a gouty diathesis is in its bearing upon diseases of the kidney. So it is with rheumatism; outside of acute attacks of articular rheumatism no importance seems to be given to this disease, yet its bearing upon latent arterial degeneration resulting in thrombosis, embolism, or apoplexy, and in cardiac disease is vital.

In the acquired from of syphilis, the usual belief is that after a certain period of successful treatment it is eradicated, but every practitioner knows the importance of certain obscure diseases in middle life, whose phenomena are inexplicable until the knowledge of the early syphilitic lesions has been obtained. Aneurism, cerebral diseases, hepatic affections, paresis, locomotor ataxia are all fruits of this disease.

The transmission of traits is little known. Personal resemblance does not always go with a ten-

dency to disease. Holden in stating that the transmission is more frequent from father to son and from mother to daughter cites the experience of John Mann, of the New York State Asylum, who found 54.6 per cent. of transmission to sons from fathers, 45.3 per cent. from mothers; daughters from mothers, 54.4 per cent., and from fathers only 45.4 per cent. The strumous diathesis has an important bearing on life insurance. Again, Holden says: "It is apt to entail a clear, fair complexion, a quick and precocious intellect and early degeneration, but occurs from mixed marriages. Consumption is most frequently manifestation and its tendency to be transmitted is marked." The Brompton Hospital Report, 1849, shows that transmission of the tendency is, more especially, from father to son, 59.4 per cent.; to daughters, 43.5 per cent.; daughters from mothers, 56.5 per cent.; sons from mothers, 40 per cent.

Old age of ancestry has a marked bearing on the question of longevity. Holden says: "From printed questions recently sent to two hundred men of seventy-five and upward, I obtained clear and full replies from one hundred, and give the results: five were seventy-five; twenty-one, seventy-six; nineteen, seventy-seven; fourteen, seventy-eight; eight; seventy-nine; nine; eighty; ten, eighty-one; three, eighty-two; four, eighty-three; one, eighty-four; two, eighty-five; one, eighty-eight; one, eighty-nine; one, ninety: one, ninety-five.

"In 70 per cent., one parent had survived seventy years; in 47 per cent., eighty years. In 88 per cent., a parent or grandparent had survived seventy years; and in 73 per cent., eighty years. In 50 per cent., a grandparent had passed eighty years. In 81 per cent., a brother or sister had survived seventy years.

"The families were prolific, and averaged between six and seven children. Including grandparents, there were one thousand, two hundred and seventy-six members, one thousand and seventy-eight accounted for, and two hundred and sixty-nine living.

Only forty cases of consumption had occurred, 3.6 per cent. of those accounted for, and 4.9 per cent. of total deaths, as compared with 10 to 15 per cent. in the community at large; twenty-eight cases of heart disease (nineteen families), 2.6 per cent.; twenty-seven cases of apoplexy or paralysis (twenty-five families), 2.5 per cent.; twenty-six cases of cancer (seventeen families), 2.4 per cent.; Bright's disease in three families only, and insanity in but two. The chief causes of death were inflammatory or zymotic. Deaths in infancy were infrequent, only 6.9 per cent. under ten years of age. The size of families and the freedom from disease dreaded by life companies are remarkable features."

The question of personal condition, age, and experience of disease in selection, according to Holden, are weighed in connection with family tendencies. Young men have undeveloped records, and, as already shown, do not yield a favorable mortality; the middle-aged are the best; old men, however sound, should be in long-lived families.

A medical director in two large life insurance companies where heart cases are "rated up" says: "Taking the experience of one of my own offices, I find from the last analysis of invalid lives that of five cases rated up for disease of the mitral valve the average age of the insurance was thirty-five years, the average addition twenty-three years, and no deaths occurred during the period comprised in the report; whilst out of fifteen cases in which the nature of the heart-disease is not specified the age was forty-one, average addition eight years, and three deaths occurred.

"From the subsequent course of these cases it appears that of the first series, those with mitral disease, two have since died, one after being insured for thirteen years, to whose actual age seven years had been added. Had twelve been added no loss would have occurred to the office. In another fatal case, which also occurred from heart-disease, ten years had been added to the actual age, but the policy-holder died at the end of five years, and an addition of twenty years would have been needed to save the office from serious loss. In two other cases of the mitral series the results have been good; the cases were rated up to twenty and twenty-five years respectively, and now living, having been insured, one for twenty-two and the other twelve years. Taking this series alone, the gains fairly balance the losses.

"In the other class, that in which no definite valvular disease was mentioned, six deaths have occurred, one by accident one year after the policy was taken out, and two others at short periods, viz.: six years and nine years. In two they lived twenty and eighteen respectively.

"Of the seven cases now living, all had lived long enough to cover loss, and three have proved very advantageous. Thus, this class, like the first, has not been found by experience unsatisfactory, although in many of these cases the extra rating has not been nearly sufficient, and, curiously enough, this is specially true with the lives that have proved unfortunate.

"The general results of the experience of these cases have been confirmatory of the received opinion that where definite heart-disease exists a really considerable addition is demanded.

"Functional murmurs are invariably systolic in time, and are heard, as the case may be, (1) over the pulmonary area, close to the left of the sternum between the second and third ribs; (2) over a space of about an inch and a half to the left of the sternum, and in the second interspace just where the left auricle comes up from behind to the left of the pulmonary artery; (3) over the aorta. The murmurs in these three situations are usually found in some form of chlorosis or anæmia, or in the course of acute febrile disease, and may be dependent upon a changed condition of the blood, constriction or dilatation of the artery,, or acute dilation of the heart. Pulmonary systolic murmurs are more frequent than any other form of cardiac murmurs."

Heart murmur have been discussed over and over, and, undoubtedly, so long as the proper significance cannot be given to murmurs alone connected with the heart and its circulation just so long will the uncertainty of their relation to longevity be undetermined. As well pointed out, a heart murmur simply shows that there is something wrong either with the circulation, from some impediment to its progress through the cardiac cavities, or with the character of the circulating medium—the blood—and no more; and how far and to what extent this disturbance exists, and how it will affect the life of the individual. Consider (1) the character of the murmur and position of its greatest intensity; (2) the time of its occurrence; (3) the position of the apex-beat and evidence of cardiac enlargement or alteration in the position or shape of the heart; (4) the symptoms that point to disturb-

ance of the circulation; (5) the character of pulse as regards force, irregularity, intermittency; (6) the antecedent history of the case, questions of rheumatism, gout, or syphilis or other taint.

Every individual has a certain expectation of life. A thousand cases of cardiac disease in all its varieties placed in one class with all renal disease or disease of the pulmonary system in another, then their average mortality could be estimated and a certain premium could be charged, which would make their insurance safe to the company. Diseased risks indiscriminately mixed, are not so well placed. It would be necessary to classify these cases, to study them on a very large scale.

PERSONAL IDENTITY.

By G. R. JOHNSON, M. D.

THIS interesting subject may be divided into two sub-divisions; (1) relating to the identity of the living; (2) the identification of the dead.

The question of personal identity arises both in civil and criminal cases—while if entered in both phases of the question, it is generally of more importance in criminal cases. For example, a child or a man disappears, such as Charley Ross or Sir Roger Tichborne. Years later some one appears who claims to be the long lost one. In the time-worn case of Sir Roger Tichborne, a man appeared and claimed a large estate and an important English title. He was identified even by Lady Tichborne as her long lost son and was fully identified by more than eighty people from various walks of life. As many more denied it was Sir Roger, and a great trial followed. Under cross-examination he broke down, confessed to deception and was sentenced to imprisonment; and after his release, he came to this country and lectured! Another case always cited is one that occurred in the sixteenth century, the case of Martin Guerre. These are the two great historic cases.

A body was found in a Scotch river not long ago of a man who had lost the index finger of one hand, and also one ear. He was recognized as the head of a family, and they had a funeral. A ferryman on this river noticed one of the daughters in mourning and inquired as to the cause. When she told him her father was dead, he said he had carried her father across the river half an hour before, and so it proved to be. There is a case on record in New York where nineteen different persons recognized a body as different individuals.

In identifying the living there are certain methods to be taken into account. In the first place the process would be through examining the normal characteristics, and then afterwards the abnormal characteristics of the individual—any peculiarities that have come to him through disease or through accident or any deficiency, or, in the end, mental peculiarities. As to his normal peculiarities, the question as to size would come up, as to his voice, gait, dress or any thing that would naturally suggest itself to you—as regard to the general question, that is, not going into measurements, which I will speak of later. Then coming down more to detail, any characteristics for instance as to teeth or hair or hand or foot. As to the teeth it is unnecessary to say to you that age is largely shown by the development of the teeth. Yet you must remember in a matter of this kind that exceptions to the ordinary rules and standards are of the utmost importance. Peculiarities of the hands and feet are to be considered, and certain special peculiarities arising from the use of the hand in certain occupations.

Experiments have been made in regard to the value of hand-prints in identification. Many papers and articles have been written, and a study made that might be regarded as fanciful in regard to hand-marking. The importance has, I think, been overrated by some and overlooked by others. It has been shown that these markings persist for many years. The Chinese believe that the mark of the thumb remains the same for life. It was found in the investigation of a large number of hands that in only one case, after many years had there been a change in the long line of the hand or the "life-line." The use of the thumb-print has been made in court in a case of robbery of an express company. The mark left by the robber on some seal was found to be identical with the mark of the accused man's thumb. The jury, however, acquitted the man, failing to see the strength of the argument.

Not only the thumb-prints and the hand prints, but the foot-prints may have a value, and in more ways than one. The question, for instance of the difference made by the shoe, and the question of the different sort of impression that would be made by the foot on different substances. It is the accumulation of small circumstances that is of importance. Authorities differ as to whether the foot-print on sand is larger or smaller than the foot itself. I think that it probably is smaller, as the loose sand falls in and fills up the space, whereas in substances like wax the mark is larger than the foot.

Besides matters of this kind we have the more peculiar marks of personal identity, such as the birth-mark. These have served as points of identification, yet many of them can be removed by surgical means, and this question would come up in their consideration. Tattoo marking was one of the questions in the Tichborne case. They vary very much. According to the depth of the marking, and the method employed and the substances used, the tatoo marks may be more or less removable. There was a famous French case in which a man's life hung on a question of tatoo marking, and at that time the whole question was thoroughly investigated.

Of course questions of dying the hair, plugging the teeth, etc., all come up. The dentist may have to play a part in the case. There was a celebrated case of a man in Boston who was badly burned. The identification was made from a part of his skull by the fact that certain fillings were left, and these were compared with the records of the dentist.

Scars are an important point in identifying. As years go on, disease may attack the body; or changes due to a congenital condition, as rickets, are shown more distinctly, and must be taken into account when a question of identity arises.

A word about the Bertilion method, first taken up by the French Government. The number of criminals examined by this method reaches up into the hundreds of thousands. It is a simple method, though the details are very elaborate. It rests on the claim that there are certain normal peculiarities that remain with each individual through life, such as peculiarities of facial contour, peculiarities of the trunk and limbs, and a method of recording these has been elaborated.

Systematic measurements are taken, the trunk is divided into squares and each part recorded, then a photograph is taken. This method is used to a certain extent in this country also. I have here a partial copy of the system. It has been used to some extent in the Army and Navy. It is a shrewd criminal that can get away from all this record of identification; and it is said they sometimes give up their criminal life because they cannot get away from discovery! The old way that a criminal had of screwing up his face when his photograph was taken is of no avail now.

The mental peculiarities might take some part in the identification. When the supposed Tichborne came back it was alleged that his mental refinement was not the same that that of the real Tichborne would have been although he had disappeared at a rather early age.

Not only are questions of the identification of the living those that surround the individual himself; but sometimes the question arises as to the capability of a witness to identify another. The acuity of vision is a question and whether he could identify the individual by the flash of a gun or by lightning flash; the question of his ability to identify a given individual at a given distance; and the question as to his acuity of hearing, his ability to identify a man by his voice, all of these things depending on the normal or abnormal characteristics of the witness in testifying.

One of the points of identification is by means of the stigmata of one's occupation. One man has given us a list of thirty or forty occupations in which marks for identification are made. The condition of the hand in the shoemaker and seamstress is an illustration, and the stooping condition of a cooper or one in any occupation that required close sight and application.

The question of the identification of the dead is interesting, first in regard to the recently dead when we have the body in its entirety. Nearly all the points brought out in regard to the identification of the living will apply for the recently dead. Of course, the manner of death would have some bearing on the condition. It is not always through a study of the entire body that we are to draw our conclusions, but it may be only a portion of the skeleton, a few teeth or fragments of the body. The sex, age, height of the individual, the scars and deformities and the race may all be matters of moment. In a famous case in London those having charge took up almost every point that a lecturer would take up in speaking on the subject, and they made an elaborate report which is a treatise on the identification of the dead. They measured the length of the arm and from that computed the probable length of the whole body. They took the length of the ring finger and multiplying that by nineteen they got about the same result for the height. Then working from measurements of the lower extremities they computed the height and then took the average of these. The result corresponded very closely with the height of the person it was supposed to be. With regard to the sex it is not so hard to tell from the skeleton, having the whole pelvis to examine. As regards age, I have already called your attention to the condition of the teeth as an indication. Examination of the bones will show much, according to the minuteness of your investigation.

These are the most important facts with regard to the identification of individuals, living or dead.

PREGNANCY, ABORTION AND INFANTICIDE AS RELATED TO MEDICAL JURISPRUDENCE.

M. E. FITCH, M. D.

WHEN an heir to an estate is wanted, it may be supposed that a woman is pregnant in order to lay claim to the estate; or a man may be killed or dies suddenly, then the wife may lay claim to the estate for the child with which she asserts she is pregnant. An old English law states that a woman who has committed a homicide while pregnant can not be tried until this condition is terminated. Thus we see the question of pregnancy is related to the law in various ways. The first points in pregnancy are medical questions. It is the duty of the expert to know the signs of pregnancy; in the law they are settled as follows: (1) The subjective signs, those given by the woman herself. It may happen that the woman tries to conceal these, when they must be obtained by severe analysis. In medical jurisprudence, it is not the usual cases nor the usual signs that are to be looked out for, but the unusual, exceptional cases. Such points are the exceptional existence of menstruation during pregnancy, or cases where pregnancy has come on in a period of the absence of menstruation. Such irregularities can be used as defence on one side or the other wishing to break down testimony.

After all the important signs of pregnancy in the eyes of the law are the objective signs; these are the beating of the fœtal heart and the movements of the fetus. The Roentgen ray has been tried in some cases, but unfortunately when the fetus is far enough along to distinguish trunk and limbs in this way, it can be recognized by simpler methods. There are other signs, such as changes in the vaginal mucous membranes, Hegar's sign, and changes in the personal appearance. Occasionally mistaken diagnoses have produced important cases, such as the possibility that pregnancy has been mistaken for an abdominal tumor or where an abdominal tumor had been asserted when pregnancy really existed might be the ground for suits for damage to character.

I will relate a case to illustrate this point. One young woman of nineteen was alleged to be pregnant. She went on some time until a large abdominal tumor was found to exist. If suit was not brought against the physician it was at least threatened. There are cases of enlargement proving to be phantom tumor. I know of one case of this kind, when the woman had had no children and was approaching middle age. It was suggested that she was pregnant, and extensive preparations were made; a doctor was called, and eventually it turned out to be a phantom tumor.

Coming back to the signs of pregnancy, I would like to emphasize the point that one must look most diligently for signs of the fœtal heart. It is not usually heard before the eighteenth or twentieth week. Certain peculiarities of the fœtal heart sounds should be borne in mind and sounds which might counterfeit these. It used to be held that the sex could be told by the fœtal heart sounds; but now-a-days this is not regarded of any importance. The uterine souffle or bruit should not be mistaken.

The more difficult cases are those that come in the early months; and here you would have to depend necessary postponing it until further signs are de-

veloped. No positive statement as to pregnancy could be made unless based on objective signs. The hemorrhagic and vesicular moles must also be taken into consideration.

The subject of delivery comes into legal medicine in much the same ways. A woman may declare she has not been delivered, and the question arises whether a woman can be unconscious of delivery. Or it may be alleged that a woman is guilty of the death of her child in the manner in which she has allowed it to be born. When a woman alleges she has been delivered of a child and a suppositious heir comes, it may be necessary to know the signs of recent delivery. These are simply those that you have been well taught,—the sinking and softening of the uterus, and in part the appearance of the woman herself, the general conditions that one would expect to find. It sometimes happens that the condition of the uterus after death has to be inquired into, and the signs of delivery on a dead body. If it is near the time of delivery these will be very nearly the same as on a living body. It is a well known fact that of all the soft organs of the body the uterus resists decomposition the longest. It is the last to give way. It may be that the signs of delivery at a remote period must be studied. A woman after her death was alleged to having been pregnant, and some one was accused of bringing about her death in order to conceal the fact of her pregnancy. It was, several months after her death, but portions of her body were found. The uterus was left and on examination no signs of pregnancy were found.

Abortion is one of the most important of all subjects in medical jurisprudence. It is more important than these others because it enters so frequently into cases. There is a difference between medical and legal abortion. It is now held medically that abortion is before the age of liability, and it is premature labor after six months. The law makes no such difference. History in this line shows us many interesting things. The question when the child is first alive has been one of some consideration. At one time the fœtus was regarded as not alive until three days after conception, then the time was changed to forty days; and a difference was made between the male and the female, the male requiring thirty-two days and the female forty before life was supposed to exist. Putting aside matters of this kind, the law is in strict accord with science in this matter, and legally life exists from the time of conception. It is considered abortion to expel the product of conception at any time from conception till full term.

Of course there are recognized some varieties of abortion: first, the natural or spontaneous, then the artificial. The artificial abortions are again subdivided into those justifiably produced, and those not justifiably produced, therefore criminal. In considering the subject of abortion it is of course of the greatest importance to consider the causes and the method of production of abortion. We need not go at any very great length into these. We may have a paternal cause, as syphilis, or extreme youth or extreme age or violence, while on the side of the woman there is a long series of causes which might produce abortion spontaneously, and make weapons of defense to break down testimony,—as syphilis, diabetes, infective fevers. Then, too, there may be some cause on the part of the child. Accidental causes may be from violence or not. With regard to the question of violence, it is only necessary to call your notice to the fact that under some circumstances as contracted pelvis or some cases of nephritis it is necessary to produce abortion to save the life of the woman, and the law recognizes these cases as justifiable. Induction for such reasons would not be criminal.

In regard to the induction of abortion for criminal purposes. This is a very frequent occurrence, which has existed from very ancient times, from the declining days of Rome. The methods vary very much according to the skill and perhaps the courage of those who make the attempt. It may be brought on by artificial dilators or by puncturing instruments, or by any of the methods used in the various hospitals for bringing on abortion. It is often done by one who makes use of scientific methods and does it under the protection of some hospital or institution. You need to bear in mind these facts and remember, that it is criminal abortion artificially to produce separation at any time between conception and full term, but more so to produce it with the intention of doing this. There is a difference sometimes made in the grades of offence.

Some interesting questions arise as to the duty of a physician when called in to attend a case of abortion. He may be called to attend a woman when abortion is going on. What is his duty with regard to the authorities? It is a little difficult to state exactly the position which a physician should take. Would he be criminal if he suppressed his information? Under the common law of New York there existed at one time an offence of suppressing knowledge of crime. In some states, however, this offence does not exist as a statutory law; in such states it is not a crime to withhold your knowledge. The physician must decide for himself, and consider his duty to society. If the woman dies, the physician though quite innocent of producing the abortion may sometimes be accused of being an accessory. The practice that prevails here, I think, is that the physician is expected to report to the coroner's office, either with names or without, and the thing is kept inviolate until something happens, and the accusation of criminal abortion is made. If we have positive knowledge of its being done as a crime, we would be liable to be held responsible as an accessory if we had not reported the case.

In addition to the means I have mentioned for producing abortion, drugs are used; but the majority of them are of little avail in normal gestation unless used in very large doses, so as to produce conditions of general systemic poisoning.

Infanticide, legally speaking, is killing the infant at or near the time of birth. The English law does not make a distinction between infanticide and homicide, still in some countries and probably in the majority of the states in this country they are treated as separate crimes.

There are two phases to this question: (1) As regards the child, (2) as regards the mother. In reference to the child, the facts of its birth, whether it was born alive and the question of its dentification, how long it had lived and the cause of its death are important. *There is a distinction between being born alive and having breathed.* In a medical sense of course a child is born alive that has breathed and has performed the other functions associated with breathing. But legally a child is not born until it is

entirely extruded from the parts of its mother. Obstetrics teaches us that a child may be very actively alive before it is entirely extruded.

Now the first thing to be determined by all scientific methods is whether the child has lived, has breathed. One method is by the old hydrostatic test of examining the lungs. If you take the two lungs out and place them in a vessel of water it is your duty to notice the greater or less degree of buoyancy and the degree of flotation so to speak. Take the lungs apart and try them and you should take portions of lung and try and squeeze out the air. In exceptional cases the lungs may float when the child has not breathed, and on the other hand in a child that has breathed the lungs may not float. There may be the gases of putrefaction on the one hand and on the other hand the lungs may be inflated after death. Then there is a fœtal condition where probably a small portion of air may get into a small portion of lung; and there is a collapse of the lung which may take place immediately after death. Air tests are applied to the stomach and intestines also. If the child has lived for any length of time the stomach would contain air, also the duodenum and portions of the small intestine. The amount of air might determine the length of time the child had lived. You can apply the test by tying the two extremities of the intestine, and you apply it to small portions of the intestine as you do to small portions of the lung. There are other tests as to whether the child has breathed. The Eustachian tube of the fœtus contains a gelatinous matter and this is not removed till after birth and in some instances for several weeks. Usually, however, in the first few acts of respiration it is cleared out.

These signs would show the child had breathed. How would you tell it was born alive? Only by the absolute testimony of eye-witnesses. The fact that the child has cried is not necessary to the proof of its being born alive, yet curiously enough this has been required in some laws. There are other evidences of its being born alive. If you can feel the pulse of the heart or arteries, that is evidence.

Of course having settled that the child was born alive the question comes next as to its cause of death. Use great care in examining the body. Determine the circumstances and surroundings. I know of one case of a child's being found in a bureau drawer. It had evidently been put there after being drowned. Where no child is found you may have to look around for one! Infanticide is by no means an infrequent crime. It may be accomplished by suffocation, which is by no means uncommon, or by thrusting something down its throat even by extreme violence, and strangulation, or exposure and starvation. Occasionally the body is burned or partly burned to cover up the crime. In making the post mortem you should be exceedingly careful and study conditions you would naturally expect and see if they are absent.

It is not only a crime to kill an infant, but it is also a crime to conceal the fact of its birth, though of course not one of such high degree.

Passing from this subject to the related one of Birth as related to civil law, we find that a live birth is of importance in medical jurisprudence. By the law of England there is what is called tendency by courtesy and practically the same thing exists in this country. If a child is born of a woman and then the woman dies the husband of the woman has the right to a life interest in the estate of the mother. In the case of one woman who was in the throes of labor, it was evident that she could not give birth to a live child, nor live herself. In case the mother died, and the child lived though only for a moment, the husband would come into a large estate. In this case the man refused to have an operation performed—Cæsarian section—which might have killed the woman, in order to save his estate. In order that the provisions of the law may be carried out there are some conditions necessary. The child must be even a little more than born alive; it must also have a capacity for inheritance. This brings in the question of monstrosities. If the child is of such shape and form that it belongs to the class of monsters, under these circumstances the full benefit of its live birth would not accrue.

The subjects of Matrimony and Legitimacy are related to these. They may be of great importance in regard to the chastity of a woman, or in regard to the question of a child's right to an estate. The law assumes that every child born in wedlock is legitimate unless it is proved otherwise. In order to prove illegitimacy you must demonstrate the physical incompetency of the man or in case of a suppositious child perhaps the incompetency of the woman, then there is the question of the access of the man to his wife, or prolongation of gestation. There have been in this connection some cases of almost romantic, extraordinary interest. One was the Gardner Peerage Case. In this case the whole subject was threshed out thoroughly, and all sorts of testimony given by distinguished obstetrician. What are the facts in the case? The ordinary period of gestation is usually 270 to 275 or 280 days. Some think labor likely to take place at the tenth menstrual period. The medico-legal points are: How long can this be prolonged? For what period can you stand in court and say you believe gestation possible? Usually the tendency in this country is to allow a good deal of latitude to the woman. If it can be demonstrated that gestation has been prolonged to 300 or 311 days this might be more accepted than testimony to the opposite. Undoubtedly gestation is sometimes considerably prolonged. We should allow, we are taught, at least the possibility of 300 days. At one case where the period claimed was 313 days the judge held practically that the jury should understand it would be possible. But this is at least an extreme limit.

With regard to the other aspect of the question, the shortest period of viability. It is usually held that viability is present when the birth is at the end of full seven months. It is even held by some that seven month children present no provable difference from those born at full term. But this is probably not a scientific fact. What are the facts in the matter? There are cases where six month children have lived for some time; one case is reported where a girl lived to be nineteen years old. A child which had been born at only four or five months,—it was demonstrated that in its short span it had lived for a few minutes. You would simply have to testify as to facts and then give your scientific testimony as to the probabilities.

Some other questions come in this connection, as to super-fœtation and super-fecundity. The possibility of fertilization occurring at different ovulations has been admitted and denied. I think it possible, as

in the case where one child was born, and thirty-five days later another much stronger and healthier child was born. Other cases are reported, perhaps not so well authenticated, where there was two or three months difference.

The question of Survivorship is sometimes a matter of great importance to decide which of two or three persons died first. Of course any evidence as to facts, as in the other cases, would overweigh any scientific evidence. The presumption would naturally be in favor of one. There was a case where a tough old general and his young and healthy daughter were traveling together and both perished in shipwreck. The estate was claimed by the relatives of both. In whose favor would the presumption be? On the one hand it was claimed the favor was in presumption of the daughter on account of her age, and on the other hand it was claimed the general would live longer because he was a tough old man! Laws regarding survivorship come to us from almost thousands of years ago. The Mohammedan law was rather fair, given two men that died in a battle it was held they died at the same time.

Strange as the facts seem there must be in some instances final methods of deciding in some cases. It resolves itself into two or three things. There is the presumption of survivorship. Any clear testimony as to the one that lived longer would outweigh all manner of presumptions and all manner of Napoleonic codes as to who probably lived longer.

NARCOLEPSY.

BY Q. W. HUNTER, M.D., LOUISVILLE, KY.

THE term narcolepsy is employed to denote a peculiar condition characterized by short but sudden and irresistible sleeping fits, or a strong tendency to periodically lapse into an apparent deep slumber from which the individual promptly awakens. This manifestation may occur at any time regardless of position or surroundings of the individual, or the mental or physical strain which he may be then undergoing.

Narcolepsy (recurrent paroxysmal sleep) has not infrequently been confounded with or mistaken for some variety of epilepsy, and has been designated "narco-epilepsy," a term which in the opinion of the writer is both unwarranted and misleading, since the disorder bears no especial relationship to epilepsy. To properly denominate the disease "narco-lepsy" would presuppose that the patient suffered an epileptic attack during the paroxysm of sleep, which is untrue; although the writer is not unmindful of the fact that an epileptic may be the subject of narcolepsy, that attacks of drowsiness may be coincident with or even take the place of epileptic seizures (as has been pointed out by Dana and others), and yet there is no distinct relationship between the two conditions. In narcolepsy, *per se*, the patient has no convulsion, he is simply suddenly seized with an irresistible inclination to sleep, which may last for a variable period; there is no initiative spasm, no aura, no pupilary change, in fact nothing which can be considered characteristic of an epileptic attack,—either grand or petit mal. The writer therefore contends that there can be no distinct relationship existing between narcolepsy and true epilepsy; yet he is aware of the classification of the former disorder under the sub-headings of "epileptoid," "hysteroid," etc. This apparent error in classification is undoubtedly due to lack of definite knowledge in relation to the distinctive etiological and pathological features; as a matter of fact, it may be stated that little is positively known of the etiology and pathology of this peculiar condition (narcolepsy), save that it is presumed to be the result of some complex (probably yet unknown) neuropathic influence. It has been suggested that the etiology is probably different in individual cases, as the subjects differ greatly as to age, sex, and in many other respects, as will be further emphasized by the appended collection of cases.

Doctor Charles L. Dana* collected forty-nine cases of morbid drowsiness which he divided into three classes, viz.: (1) epileptoid, (2) hysteroid, (3) other forms, and attempted to show that the first variety bore a more or less distinct relationship to epilepsy, in that the attacks of drowsiness apparently replaced epileptic seizures. He cited eleven examples of this class. In the second division (hysteroid) he included the lethargics, "sleeping girls," and all those individuals the subjects of short periodical attacks of slumber and persistent drowsiness; and in the third class (other forms) he mentioned those cases where the patients appeared to be the victims of a "special morbid hypnosis" not allied to either epilepsy or hysteria.

It was claimed that the predisposing causative factor in these various forms of narcolepsy was a neuropathic constitution, inherited or acquired. Sex appeared to have an indistinct relation to the special form of the disorder, as of twelve patients suffering from the hypnotic variety nine were males and three females; of the hysteroid variety only five were males and twenty-one females; of the epileptoid class seven were females and four males.

It will be observed that Dana includes all the well-known varieties of sleep-disease under the general heading of "morbid drowsiness" with the three sub-headings as noted. While this classification (morbid drowsiness) may be as pertinent as anything thus far suggested, it would appear that he does not draw the dividing line with sufficient distinctness between simple narcolepsy (an irresistible desire or inclination to fall asleep) and conditions which are more or less allied but do not come strictly under the same classification, *e. g.*, the periodical sleep of hysterical subjects, lethargics, the so-called "sleeping girls," epileptics, etc.

As already indicated, the writer believes it an error to include any of these allied conditions under the classification of sleeping-disease, or simple narcolepsy, that they should be placed in the category of diseases of which they are integral parts where they properly belong. In other words, they are separate and distinct from narcolepsy and should be properly differentiated and classified.

As to the primary causative factors which bring about the normal condition recognized as narcolepsy. As already intimated, the most prominent appears to be a neuropathic constitution, probably more often inherited than acquired, although it not infrequently happens the family and personal history is absolutely negative in this respect. In addition to a neurotic tendency there may be either a sudden lessening of the blood supply to the brain, a frequently recurring change in the cerebral circulation, producing a condition analogous if not identical with that which exists in normal or physio-

*Journal of Nervous and Mental Disease, Vol. 2.

logical sleep, or an accumulation of effete material in the blood, the result of defective metabolism, which brings about the sudden irresistible desire to sleep.

Another factor believed by some authors to act as a cause is obesity, as in many instances the narcoleptic is obese, but this hypothesis remains unproven. Again, not infrequently during a narcoleptic attack there occur numerous erythematous spots about the patient's neck and elsewhere, which has led to the conclusion that the primary cause of the disorder is traceable to a vaso-motor disturbance, *per se;* but the erythema is quite evanescent in character and is probably only coincidental, therefore the theory seems to remain unproven. Granting, however, that it be true vaso-motor disturbance is a causative element, this is probably the result of toxalbumens or other poisonous substances (due to defective metabolism) circulating in the blood, so that nothing is added to facts already known.

The clinical interest attaching to narcolepsy is such that even reports of isolated cases should not be allowed to pass unobserved. Current medical literature reveals but few instances where the disorder has been accurately described. The following cases have no reference to the series of forty-nine already mentioned collected by Dana:

Case 1. * Male, aged twenty-two. No family history of nervous disease or alcoholic excess; both parents living; father well, mother has asthma. The patient developed normally; attended school and made fair progress in his studies; was nervous during early childhood and youth and complained of indigestion (apparently a mild neurasthenia associated with catarrhal gastritis); improvement manifest at puberty; at fifteen he began work in a store; became intemperate, at times using liquor immoderately; sexual appetite developed early and was unusually strong; indulged in excessive venery for several years; at nineteen became very nervous; had bad dreams,and on a number of occasions had hallucinations during waking hours; saw strangely formed animals approaching him, but always recognized the appearances as imaginary. The tendency to sleep began gradually; at first an intense drowsiness, which became insistent; after sleeping about an hour would awaken refreshed. This tendency gradually deepened in intensity and increased in frequency; a year later he would fall asleep twenty to fifty times daily, but at no time was slumber profound, it lasted but a moment or so, and if touched or spoken to he would always awaken; unable to follow any occupation; frequently sleeps while standing, but awakens in time to prevent falling. Three and a half years have elapsed since the attacks of drowsiness became pronounced.

Examination showed a fairly well-nourished young man, without special stigmata of defective development; heart, lungs and kidneys normal; no sign of organic nervous disease; never had gonorrhea or syphilis; some tremor of hands; knee-jerks increased; more or less irregular contractions of all muscles; an occasional start resembling tic convulsif; co-ordination unimpaired; sensation intact; eye grounds and pupils normal; appetite fair.

Nothing in the way of treatment modified the chief symptoms. The possible relation of the disorder to epilepsy being recognized large doses of bromides were administered which only increased the tendency to sleep. Full doses of ergot were likewise of no value.

Case 2. * Female, aged fifty. Narcolepsy developed with advent of the menopause. While playing cards, crocheting, knitting, or even during conversation, she would suddenly be absolutely unable to resist the tendency to sleep; sometimes there appeared (during the attack) numerous erythematous spots on her neck which speedily faded. In course of time this tendency to sleep gradually disappeared, the exact duration of the trouble being unknown; she was a gouty subject and rather stout, but enjoyed reasonably good health. Twenty-eight years elapsed from the time the symptoms mentioned were observed until her demise, at the age of seventy-eight years, from cerebral hemorrhage.

Case 3. * Male, aged forty; of fine physique; strictly temperate; had syphilis a number of years previously; had taken exceedingly good care of himself, and had made repeated visits to Hot Springs. The syphilitic manifestations consisted of erythema (roseola), some falling of the hair and glandular enlargements; later an occasional vesicular eruption on the palms of the hands; there were no sores on his body; at one time he had well-marked congestion and enlargement of the liver; he had suffered from malaria and visited Carlsbad with benefit. From time to time he would be seized with an irresistible desire to sleep; at the theatre during a side-splitting farce, or in the evening sitting in the parlor with company, he would suddenly fall asleep. After visiting Carlsbad this tendency to sleep became less strongly marked, recurring only at long intervals when his general health was somewhat below par, and finally passed away entirely. At last accounts he was enjoying good health.

Case 4. * Male, aged forty; obese; addicted to excessive use of alcohol; suffered from considerable dyspnea; could not keep awake; would fall asleep at any time in the midst of engrossing business occupations. Examination showed slight enlargement of the liver; hypertrophy of the heart, though this was not excessive, a double systolic murmur (aortic systolic and mitral systolic); an ugly and troublesome nasopharyngeal catarrh. Under treatment addressed toward invigorating the heart, re-establishing the secretions, and overcoming the decided lithemia, the tendency to fall asleep disappeared. Latest advices indicate that he is enjoying fairly good general health, suffering little from either the cardiac or hepatic disease.

Case 5. ** Male, aged seventeen; unusually well supplied with adipose tissue for one of his age; intellectually dull; had to spend a long time and often fell asleep over his lessons; sometimes he would fall asleep in the bath-tub; would sleep at any time and anywhere, even while eating; had marked oxaluria; heart action laborious because of excessive deposit of fat. On restricted dietary, excluding fat-making foods, and the administration of strychnine and nitro-muriatic acid, he steadily improved, lost flesh, the tendency to sleep became less and practically disappeared. His general health is now excellent.

Case 6. * Male, aged fifty-five; no neurotic or intemperate family or personal history; at the age of fif-

* H. N. Moyer, Medical Record. (Quoted by Gaillard's Med. Jour.).

*American Practitioner and News.
**Ibid.
**Ibid.
*Ibid.

teen he began having narcolepsy; would go to sleep while riding horseback or working in the field; these attacks soon became so frequent that he could follow no occupation; he would fall asleep during an evening's entertainment, or in the parlor with other boys and girls, slumber usually lasting five to eight minutes; when aroused he was conscious that he had been asleep but showed no other manifestation. This irresistible inclination to sleep has not yet entirely disappeared, but in the last few years it has greatly diminished. There was never an indication of a convulsion,and his general health has been good at all times; there is no evidence of either gouty or hepatic disease.

Case 7. * Male (negro) aged twenty; personal and family history as clean as the average in this class of patients; no neuropathic tendency so far as could be ascertained. This was a marked case of narcolepsy; the patient would fall asleep at any and all times, the naps lasting several minutes; his condition was such that even the "festive game of craps" would not keep him awake; he would often fall asleep while engaged with others of his race shooting craps. Duration of the disorder, treatment employed, if any, and present condition unknown.

Case 8. * Male, aged fifty-seven, weighing nearly three hundred pounds; a county judge; would frequently fall asleep and snore during the taking of important testimony; it was said that he heard, even during this apparently deep sleep, every thing that was testified to. On one occasion, while taking testimony with a number of lawyers at a hotel, suddenly, without warning, he went to sleep and fell out of his chair; his companions carefully lifted him up, poured cold water into his face, etc., supposing he had a "fit" of some kind, and it is said he remonstrated with them severely for so doing. His general health was unaffected.

Case 9. Male, aged fifty-three, weighing over two hundred pounds; a prominent citizen, director in several large corporations; has a decided neuropathic history; addicted to alcoholic excesses; a chronic gouty subject, and suffers considerably from dyspnea (probably asthmatic). An irresistible inclination to fall asleep was first observel several years ago; he would often lapse into an apparently sound sleep during important executive meetings, but was always easily aroused. He has frequently visited Hot Springs with benefit so far as his gouty manifestations are concerned, but there has been no improvement in the narcolepsy under any method of treatment. *

Case 10. Male, aged thirty-five; was placed in school at the age of six years; at seven he developed narcolepsy, the inclination to sleep coming on gradually; he would fall asleep over his lessons, playing marbles with companions, and even while standing in class recitations, though he always awakened in time to prevent falling. This condition continued until after puberty, when it gradually disappeared; exact duration and treatment, if any, unknown. (There was in this case a decided neuropathic family history, and as a child the boy was extremely nervous and excitable.)

Cases 11 and 12 are practically counter parts of Case 9 and need not be referred to in detail.

General considerations: It will be noted the neuropathic element was not prominent in the larger per cent. of these cases, although the narcolepsy was pronounced in all;

Age cannot be considered as having any special influence based upon these observations;

Sex seems to have some bearing, as of twelve cases, but one occurred in a female;

When occurring in young subjects there is often improvement, or the narcolepsy may even entirely disappear, during adolescence;

Obesity, gouty and hepatic diseases are apparently factors of more or less prominence;

This disorder may disappear with or without treatment, to reappear when the general health of the individual is below the normal standard;

It seems impracticable, from evidence thus far deduced, to arrive at a satisfactory conclusion as to principal etiological factors, little being apparently accurately known of either etiology or pathology;

No method of treatment thus far suggested directed toward relief of the disease, *per se,* appears to have any appreciable affect, but amelioration not infrequently follows the correction of other systemic irregularities, e. g., cardiac, diestive, assimilative, gouty, lithemic, malarial,

*Ibid.
**Ibid.
***Ibid.

*This patient is a personal friend of the writer; he has often lapsed into a profound sleep while talking to me at the office, but always awakens promptly; I have frequently observed him fall asleep while eating a hearty dinner, but have never known him to sleep in one of these attacks longer than four or five minutes. He does not fall asleep while walking, standing or riding, but so soon as he sits down and becomes quiet a paroxysm of sleep comes on. These periods of slumber recur frequently, regardless of mental or physical exertion. This also applies to Cases 11 and 12.—Q. W. H.

LINGUÆ PYRAMIDALIS MALARIÆ.

BY LUCIAN LOFTON, A. B. PH. D., M. D., BELFIELD AND EMPORIA, VA.; EX PRESIDENT SEABOARD MED. ASSO. OF VIRGINIA AND NORTH CAROLINA.

SEVERAL months ago the writer called the attention of the medical profession to a pathognomonic sign, in cases of malarial infection, which has been since noted repeatedly and continuously, to such an extent that at the present this condition being so constant that when seen a blood examination is considered useless. The condition of the tongue may be described as follows:

Upon protruding the organ you will observe, beginning at or amongst the larger papillæ, one, but more often two pyramidal shaped discolorations, the base of which being lodged among the papillæ, from one-sixteenth to one-eighth of an inch wide, and from one-half to one inch in length to the apex, the latter ending in a true point generally about one inch from the tip of the tongue. This condition may be found along the outer margin of the tongue, though I have seen it as frequently near the middle; but, especially is this the case when only one discoloration exists.

The shade of these pyramidal discolorations may be briefly described as being of a dirty bluish-brown, not what is ordinarily recognized as a snuff color or a tobacco tongue. Neither is it, a so-called bilious tongue.

It is sui generis and when once carefully noted is usually immediately recognized. When the tongue is heavily coated the characteristics are more plainly brought out, viz.: its true shape, size, number and peculiar color.

These pyramidical shaped bodies of the tongue have been noted for years by the writer, believing up to a short while ago an ordinary brown coating so often met with in fever cases, consequently, no serious study of it was made, but finding it so frequently present within the past few years, and especially did I see it in malarial infection that now its presence is invariably looked for, and so far has been found in 95 per cent. of my malarial cases, either of recent or remote infection.

Up to a few months ago, strange to relate, I do not remember having seen this condition present, but only in cases of primary infection, but during the present summer it has been observed in every form of malarial poisoning, sooner or later, I have treated; and hereabout may be noted every variety indigenous to the black belt of tide water Virginia.

The various saline, vegetable and metallic purgatives *will not clear up this condition,* of the tongue unless immediately followed by some active preparation of the cinchona bark; which when tolerated in 85 per cent. of my cases have been heroic for small doses be they ever so often, will do no good, whatever. This malarial "pyramid" occurs in all ages, sex, color, and conditions, but you will observe its presence more frequently and plainly in the young adult, than in the extreme young and old. Then, again, a double or dual pyramid is peculiar to the negro race; especially is this true in ages ranging from fifteen to thirty-five.

The color of the spaces is identical in both races, the pigment of the patient appearing not to influence the condition in the slightest. Usually these discolorations remain until you have thoroughly cinchonized your patient, but in some instances have persisted until the system had been totally divested of the malarial parasite.

You will naturally ask, what is the origin of this peculiar symptom. My only answer is, malarial infection. For I have never met it in persons free from the malarial germ. The so-called typhoid tongue is separate and distinct from it, as is the bilious tongue, also. As stated above, linguæ pyramidalis malariæ have no resemblance whatever to any condition of the tongue, seen by the writer in any fever systemic poison, or other condition where the tongue might be taken as an index, to the true state of affairs. It must be seen to be fully understood and recognized. The stain, when removed by scrubbing, will return in a few hours, and sometimes while forming, resembles the color of a 2 per cent. permanganate of potash solution, which has undergone partial oxidation. However, it resumes the dirty bluish brown, as indicated above, and is more beautifully outlined than before. When the pyramids begin to disappear, they fade away by segments as it were, first one portion or spot of the normal tongue disclosing itself until finally it is entirely relieved of the stain.

I trust the readers of the Medical Times, especially those who treat malaria and its complications, will carefully peruse this brief article and faithfully search for this condition. You will find it sooner or later beyond peradventure in 90 per cent. of all patients suffering from the ravages of malaria. A case in my own family, now convalescing from malarial fever, did not have these stains of the tongue until the morning of the eighth day, a condition I especially wanted the other members of the family to see and appreciate. I hope I have intelligently outlined the "linguæ pyramidalis malariæ, and any point not made perfectly plain, or if anything has been omitted of value to my readers, I will cheerfully answer all inquiries.

In conclusion, I will state I have on hand at present (August) twenty-seven cases of malarial fever, the types being varied, all of whom now present the pyramids with the possible exception of two, whose ages are 44 and 53, respectively.

CEREBRAL SYPHILIS.*

BY GEORGE P. SPRAGUE, M.D., LEXINGTON, KENTUCKY.

*Read before the Kentucky State Medical Association, Louisville, 1903.

BY cerebral syphilis is meant the meningeal gummatous and arterial inflammations of the brain; inflammation of the arteries, especially those of the base, being more common than the other two forms combined.

Hjelmann states that in every thousand cases of syphilis there are from fifteen to twenty-five cases of brain involvement, in four hundred and thirty of which cases the cerebral symptoms began within one year in 25 per cent. and in 50 per cent. within three years of the initial lesion.

All writers agree that cerebral involvement usually occurs in those cases of syphilis in which the specific treatment has been carelessly taken, or wholly neglected. Alcoholic indulgence and other dissipations, prolonged overwork of body or mind, a neuropathic constitution, and heredity, also predispose to it. It may occur at any period of life, but is most frequent between the ages of twenty and forty years. The proportion between the sexes is one case in women to seven in men; but as about the same proportion prevails in the initial lesion, this has no especial significance.

Bearing in mind that syphilis of the brain consists of a gummatous exudate thickening the meninges, or gummatous tumors varying from the size of a millet seed to that of a walnut, and situated anywhere in or on the brain, or of an atheromatous or purely inflammatory condition of the arteries, the symptoms will be more easily understood.

Berkley, Huebner and Baumgarten have made extensive examinations of the cerebral vessels in syphilitics, and Berkley found that the arterial was the most common form of the disease. He also found that in a large percentage of his autopsies on persons dying of syphilitic insanity, there were anomalies in the circle of Willis so great as to profoundly affect the symptoms. We can also see why the symptoms are so complex, so variable and so irregular, inasmuch as the meningitis, arteritis and gummata are usually combined with each other.

Sachs says that no set of symptoms is pathognomonic of the disease, but the multiplicity of symptoms and the pupillary changes are almost so.

In the words of Church, "The general symptoms are multiform, but with special prominence of certain features. One case attracts most attention by its eye symptoms; another by its neuralgic pains; another by its convulsive manifestations; another by its stupor, or mania, or paralysis."

In most cases the onset is insidious, and for many weeks the patient may have insomnia, general nervousness, a neurasthenic tire, or an agonizing headache, usually worse at night. After a variable length of time these premonitory symptoms, progressing or remaining stationary, there will occur diplopia, or paralysis of one or both sides of the face, or of a limb, or any degree of hemiplegia. In one case there may be difficulty in swallowing liquids, with ptosis, hallucinations of sight, somnambulism and vertigo, particularly when walking on an uneven surface, and partly due to diplopia. In others there may be acute outbreaks of maniacal delirium, fainting attacks, fleeting paralysis of various groups of muscles, usually those of the face, epileptiform convulsions and somnolence which may even deepen into coma.

In a case recently seen in consultation with Doctor Wiley, of Lexington, Kentucky, a man of forty-five, a syndicate lecturer and story-writer, after months of driving work, became sleepless, so restless he ate his meals while walking about the room; had vertigo when walking, with nausea, and double vision. He also had drooping of the mouth due to paresis of the muscles, difficulty in swallowing liquids, slowed and slurred speech, and shuffling gait. All these conditions varied greatly from time to time. Under the use of from three hundred to four hundred grains of iodide of sodium and sixty grains of mercurial ointment daily he rapidly improved and is now, after three months' treatment, anxious to resume his work.

The diagnosis, and an early one, is all-important, as upon it hangs the life of the patient. If there is a clear history of syphilis, or the symptoms are typical, a diagnosis is easy; but if all possibility of syphilitic infection is denied, as is often the case, and the symptoms are vague, a more difficult diagnosis can scarcely be found.

A history of syphilis, pupillary immobility, ptosis, strabismus, paralysis of face muscles, double vision, optic neuritis, with contraction of the visual field, severe unilateral headache, sensory nerve changes, vertigo with nausea, slowed or slurred articulation, epilepsy and apoplexy, are the symptoms, any one or more of which may be present in a given case.

Vertigo, double-sided paralysis, thickness of speech, without a clouded mind, and severe headache, should in the absence of other symptoms be enough to decide the diagnosis.

Epilepsy or apoplexy occurring near the age of forty years, should suggest syphilis. Cases with epileptiform or apoplectic attacks in general paretics are often mistaken for cerebral syphilis, but the mental exhilaration, the Argyle-Robertson pupil, exaggerated knee-jerks, facial tremor and altered handwriting of paresis should point out the difference; finally the use of the iodides and mercury will complete the diagnosis.

The prognosis depends very much upon the earliness and vigor with which treatment is instituted. Fournier reported thirteen improved and thirty recovered in a total of ninety cases. Dana believes that the injury to nerves or nerve roots and arterial disease short of obliteration or softening may be entirely cured, but the fact remains that gummatous softening of nerve tissue and arterio-sclerosis occur at some period in untreated cases, and can never be removed by therapy.

Although treatment will check the disease in all but the most obstinate cases, a guarded prognosis should be given in the most favorable ones. Treatment should be begun at the earliest possible moment and pushed to its physiological limit. Although Collins and others doubt that anti-syphilitic treatment will prevent involvement of the skull contents, Hjelmann's statistics show that about 85 per cent. of cases of cerebral syphilis had had little or no treatment in the second and third stages.

Potassium iodide is perhaps most used, but sodium iodide is borne better. It should be begun in doses of from ten to fifteen grains three times daily, and steadily increased to 100, 200, 300, 400 or even 500 grains t.i.d. It may be given in large amounts of water, milk or vichy, and I know a man who takes 360 grains in his food every day—and says he likes it.

With the iodide should be given in most cases some form of mercury. The bichlorid is good, but mercurial ointment, forty to sixty grains a day, is better. Before each inunction the patient should have a hot bath, and the mercury be then rubbed into the inner sides of the arms, thighs, flanks and groins in rotation. These full doses may be continued for from four to six months, alternating three or four weeks' use of mercury with four or five weeks' use of the iodide. Of course such massive doses require watchfulness to prevent salivation and iodism; and at times, even when the disease is progressing, it becomes necessary to stop specific medication and devote every effort to the general upbuilding of the patient's health.

The use of iron and strychnia, a generous diet, and every means which will increase the elimination of waste products, and stimulate the functions of the skin, are indicated throughout the disease.

THE CLINIQUE.

Treating Arterio-Sclerosis with Nirto-Glycerine.—Thoma, whose theory of the nature of arterio-sclerosis is most commonly accepted, believes the development of the disease dependent upon the following law:

"A showing of the blood current in an artery that is not at once and completely counteracted by a proportionate contraction of the media leads to new growth of connective tissue in the intima, which lessens the lumen of the affected vessel, and thus restores the normal swiftness of the blood current more or less completely."

If this is true, the lesion has its origin in the media, which, in some unknown manner has lost its elasticity. In consequence, the artery dilates and the normal speed of the blood stream is lessened. This showing of the blood current produces a hyperæmia of the vasa vasorum and a new growth of connective tissue in the intima, with which there is subsequently associated a similar formation in the media and adventitia. So soon as the growth of new tissue reaches such dimensions in any situation that the normal speed of the blood current is thereby re-established, the sensitive nerves are restored to their normal condition, the hyperæmia of the vaso vasorum disappears, and no new tissue forms in the intima until the blood current again undergoes changes of speed and again this process is repeated.

Ashton points out, this degeneration is followed by a more or less distinct swelling, the compensatory thickening of the intima projects to some extent into the lumen of the vessel ,and thus interferes with the blood current. Similarly the orifice of the blood vessel is narrowed where it branches off from the large vessel.

As a result of these changes various and grave disturbances of nutrition may appear in the organs to

which these vessels run, and it is possible that often a vicious circle is established in this way. For illustration, the diseased arteries bringing less blood to a given organ than its nutrition requires, local degenerations will ensue in the organ. The changed conditions call for still less blood, and there results a further disturbance in the rapidity of the current in the affected artery. This causes further changes in the vessel's intima.

Peabody points out that we will find that the same vicious circle that becomes established in the various organs of the body involves with them the arteries themselves. The vasa vasorum, sharing in the general sclerotic change, supply less blood to the arteries than is required for their proper nutrition; further degeneration of the arterial walls follows, calling for less blood for nutritive purposes, which produces in turn a slowing of the blood current in the vessels supplying the arteries; consequently the intima of these vessels become the seat of further degenerative changes.

Here is a disease which exhibits a mechanical interference with the blood current due to progressive narrowing of the lumen of the blood vessels, and resulting from this obstruction there is a lessening of the supply of blood essential to the nutrition of the tissues, resulting in various tissues degenerations.

When enough nitro-glycerin is given to produce the physiological effects, there follows more or less flushing of the face with a sense of fullness of the head, which, may be accompanied by dizziness. These manifestations are the result of dilitation of the superficial vessels, which, according to Brunton, is due to weakening or paralysis either of the muscular walls of the arterioles themselves, or of the vasomotor ganglia in or near them. That the effects of the drug are not due to its action upon the sympathic acting upon the muscular structure of the arteries through the vasomotor center, he demonstrates by showing that the nitrites lower the blood pressure in animals even after the cord has been divided just below the medulla.

Blood pressure is lowered by nitro-glycerin producing a dilatation of the arterioles. This dilatation of the arterioles gives the value to the drug in the treatment of arterio-sclerosis. In arterio-sclerosis, because the tissues receive too little blood for their proper nutrition, local degenerations occur; these local degenerations, disturbing again the equilibrium of the circulation, produce still further sclerotic changes in the arterial walls. By causing a dilatation of the blood vessels, and thereby supplying the tissues with a larger amount of blood for their nutrition, not only will be progress of degenerations in the various organs and tissues be retarded, but the course of the disease will also be arrested in the arteries themselves by supplying them, similarly, with a large quantity of blood.

A young man with negative personal and family history, has been exposed to all sorts of weather. He complained of dizziness, headache, and palpitation of the heart, but examination of that organ showed no enlargement; the first sound, however, was louder and longer than normal, and the second sound was markedly accentuated. The radial at the wrist showed decidedly thickened walls. Arterial tension was increased. There was albumen in small quantities in his urine. The average amount of urine passed in twenty-four hours was 70 ounces. Microscopically there were hyaline casts. Nitro-glycerin was administered and pushed until physiological effects were produced with good effects upon the headache, vertigo and palpitation. In three months the albumen and casts had entirely disappeared from the urine. At this time the drug was stopped. Some months later the patient returned with the original symptoms present, including the albumen and casts. Nitro-glycerin was again administered with the results upon its previous exhibition. With occasional intermissions the patient was kept upon this drug during a year, but it is now over a year since treatment was suspended and there has been no symptoms of the disease.

Ashton, who has written on this subject, reports the following case: A tailor, aged 45, family history not obtainable; patient in appearance a man of fully 65 years of age. For many years had habitually used alcohol to excess; complained of headache, intense vertigo, causing him at times to fall in the street, and impairment of memory. An eye examination showed some recent, and many old, retinal hemorrhages. Urinalysis revealed albumen; quantity of urine voided in twenty-four hours increased; microscopically were found hyaline and some granular epithelial casts. The superficial vessels showed a marked degree of sclerotic change and arterial tension was increased. The heart was considerably hypertrophied, first sound prolonged and booming in character, and second sound markedly accentuated. The patient was first put upon treatment over three years ago, nitro-glycerin being the remedy selected. While no curative result has been obtained, yet the drug accomplished an undoubted retardation in the progress of the disease, in addition to the almost completed disappearance of the cerebral symptoms, including a marked improvement in the memory.

As previously stated, the chief symptoms of arterio-sclerosis are due to the malnutrition of various organs, resulting from a lessened blood supply; nitro-glycerin relieves these symptoms by increasing the blood supply of any given tissue. The cardiac hyperthropy, however, so common an attendant upon this disease, is caused by increased peripheral resistance. By lowering the blood pressure and, according to Bartholow, by removing the inhibition exercised by the pneumogastric nerve, thereby lessening the work of the heart, nitro-glycerin results in relief of this condition. The advantages from the use of the drug in attacks of angina pectoris are too well known to require discussion.

Because nitro-glycerin lessens arterial tension and thereby diminishes the amount of urine voided and lessens the output of albumen; and because it increases the blood supply to the kidneys, and therefore improves their nutrition, and prevents further degenerative processes, is its exhibition advantages in the renal changes accompanying arterio-sclerosis.

Nitro-glycerin is best administered in the form of a centessimal solution or as tablet triturates, each containing 1/100 of a grain of the pure drug.

The susceptibility to the action of the drug varies very greatly. It is not possible to state the dose. It is, therefore, well to start with a dose of 1/100 of a grain, carefully watching its effects, increasing it until the physiological actions of the drug becomes manifest. In some individuals small doses will continue to maintain the physiological effects of the drug, while in others, as in a case some time since reported by Stewart, a remarkable tolerance, even to massive doses, becomes established.

The effects produced by nitro-glycerin upon the pulse vary somewhat, though not materially, in duration

in different individuals. The effects of a dose just sufficient to produce the physiological actions may not disappear from the sphygmographic tracing for nearly an hour afterwards.

Murrell, whose observations upon the subject are now regarded as authoritative, reports that the tracing resumes the normal in less than half an hour. As the effect of the drug is but transient, therefore, the interval between the doses should not exceed two or three hours.

All authorities agree that nitro-glycerin tends to arrest the oxygen-carrying function of the red blood corpuscle, and it is therefore important not to give it in doses larger than necessary to produce the desired effects, and during long-continued courses of the drug to interpose frequent periods of abstinence from its use.

Arterio- sclerosis is, as far as we know at present, a progressive disease, and nitro-glycerin will not effect a permanent cure. The drug, however, will retard the progress of the affection and improve many of its most annoying and serious symptoms.

RETROSPECTIVE THERAPEUTICS.

Hot Air Treatment of Sciatica.—G. L. Bailey (*Lancet Clinic*) says that he has treated thirteen cases of sciatica by means of superheated air, with excellent results. None of these were seen at the beginning of the attack, but presented all grades of severity in the different stages of the neuralgia. Six were in the acute stage—that is, were suffering very severe pain, four of them being confined to bed—and two were able to walk at times, with difficulty. In one of these cases, in which malaria was the causative agent, the patient received four treatments without benefit, and discontinued the treatment. All the rest received marked benefit in less than ten treatments, and three of the cases have been permanently cured. The chronic cases have been benefited without exception, having gone six months or more without a relapse.

In the treatment of acute cases the patient is placed in the reclining position in the hot-air machine, all of the body except the head being inclosed. The affected leg is bolstered up with pillows in the most comfortable position, and the temperature in the machine allowed to rise slowly from the room temperature to from 240 F. to 260 F., according to the toleration of the patient. During this process he is encouraged to drink freely of cool water, and iced cloths are kept on the head. Sweating is usually profuse after 220 F. is reached, and the heat affords great relief from pain. In this manner the heat is applied for about one hour, after which the patient is given an alcohol rub and put back in bed, splints or pillows being used to hold the limb in a comfortable position. After from five to eight treatments, given usually on successive days, the pain has been sufficiently relieved to allow gentle massage after the bath with firm pressure over the nerve at its point of exit from the pelvis. As the pain subsides the massage becomes deeper and harder, and passive movements are gradually used to strengthen the muscles and prevent contraction. From two to three weeks of this treatment is usually sufficient to relieve the pain entirely in the most severe cases, the subsequent recovery being brought about by exercise by the patient and by massage.

A Case of Painless Amputation of the Leg After the Intraneural Injection of Cocain.—John H. Gibbon, M. D. (*Phila. Med. Jour.*, May 2) is an enthusiastic believer in this method of local anesthesia. If the technique of infiltration, as described by Matas, is carefully carried out failures should be few. At the present time, local anesthesia of the kind referred to in this paper, should be limited to those cases in which a general anesthetic is contra-indicated. The method is specially adapted to emergency hernia operations. The work of Crile in this field has been of great importance. A warning is needed for those unfamiliar with the method. Before trying the method in the more extensive operations one must have learnt to use it successfully in the smaller ones. The solutions of cocain employed must be freshly prepared and sterile, and the technique must be perfect. The case the author reports follows. A man, aged fifty years, with extensive tuberculous disease of the ankle joint and bones of the tarsus, presented himself for treatment. His general condition made amputation desirable, but contra-indicated the use of a general anesthetic. Fifteen minutes before operation he received one quarter of a grain of morphine and a one hundred and fiftieth of atropin hypodermically. The sciatic and anterior crural nerves were then exposed by infiltration anesthesia (Schleich's fluid), and injected with a 1 per cent. solution of cocain. Anesthesia was complete in about eight minutes. Amputation was performed at the middle third of the leg and absolutely no pain was experienced by the patient. He did not even know that the operation had been performed. Examination about one year afterwards, failed to reveal any secondary changes in the injected nerves.

Therapeutic Fasting in Typhoid Fever.—R. M. Harbin, at the recent meeting of the American Medical Association,, read a paper entitled "A Clinical Observation of Ninety Cases of Typhoid Fever with Four Deaths, with Special Reference to Therapeutic Fasting." He concluded as follows: (1) Fastings or a restricted diet is indicated because of pathological conditions. (2) Clinical facts indicate that emaciation occurs independently of the amount of food taken. (3) All severe cases should be subjected to fasting for twenty-four to forty-eight hours to relieve the active symptoms which exhaust the patient more rapidly than the lack of food. (4) After a fast restricted diet of broth, diluted milk, etc., in definite quantities should be prescribed. (5) Gelatin prevents too rapid emaciation in certain cases and renders hemorrhage less liable. (6) The cold bath, or the modified cold bath, is more effective during a fast. (7) Peristalsis favors the absorption of toxins, and cathartics should be used only to remove undigested food. (8) The presence of intestinal ulcers should be assumed to exist in every case, and the proper treatment is rest, which is better attained by fasting and a restricted diet, thus preventing hemorrhage and perforation. (9) The presence of diarrhea and vomiting indicates the adoption of the fasting treatment. (10) Fasting and a restricted diet shorten the course of the disease, and many cases run an abortive course after the amphibolic period.

In the report presented there were forty-eight cases without a death. Of eighty-seven whites two, or 2.2 per cent., died; of the colored two died. The low mortality of all cases he ascribed to the therapeutic fasting.

Treatment of Neuralgia with Castor Oil.—F. E. Waxham (*Colorado Med. Journal*) reports several cases of a

severe nature, in which this remedy brought about a speedy cure. It should be given in doses of from one to two ounces three or four times daily, although in some cases good results have been obtained with smaller doses. After the first two or three doses it usually loses its cathartic effects. We should guard against its too free cathartic action by sufficient doses of opium in some form, as it is the constitutional and not the local effect we desire. It is best given after having been thoroughly washed, and a few drops of some aromatic essence added either in milk with effervescing seltzer or in ale, especially Bass' ale. A palatable mixture can be made by combining the oil with mucilage of acacia and lime water. It may also be given in hot lemonade. The author urges the trial of this simple remedy, which has given results in neuralgia never before attained by other medicines.

Gelatin Internally in Hemophilia.—If the result was not a mere coincidence in a case reported by Hesse (*Therap. Der Gegenwart*, Sept., 1902), it must be admitted that the prolonged internal administration of gelatin holds out a prospect of cure in this disease. The patient, a child eight years old, was an hereditary "Bleeder." He had often had profuse hemorrhages, and he could not walk for more than half or three-quarters of an hour without effusion of blood taking place into the joints. Various forms of treatment had been tried without benefit, when he was ordered to take daily six ounces of a 10 per cent. solution of gelatin. In a year there were signs of improvement, and the final result was a virtually perfect cure. The gelatin solution was flavored with lemon juice or the juice of some other fruit. Probably almost any one of the household jellies would have done as well.

Removal of BirthMarks.—Dr. L. L. McArthur described, at a meeting of the Chicago Surgical Society (*Journal A. M. A.*), a method which he believes to be new for the eradication of vascular blemishes of the integument. As the red color of these marks is due to capillary dilation, it is necessary to obliterate the capillaries. To do this he conceived the idea that if, on a plane horizontal to the surface on which this pigmented area rested, a section was made of the integument in such a way that the entire thickness of the integument would not be destroyed, but that the knife should pass through each capillary loop as it came to the surface, he would then have integument still enough left intact to prevent actual perforation of the same, with projection of the connective tissue beneath. After waiting for coagulation of the blood in these cut capillaries, a thin thiersch graft was applied; all of these cut capillaries would then be obliterated, being plugged with blood-clot, which, becoming organized, would simply destroy the pigmented appearance of such a mark. Eighteen months ago a young woman presented herself with a very pronounced mark that extended over the forehead from the scalp to the eyebrow, including the eyebrow, the upper eyelid, and a portion of the malar prominence. He adopted the method described on a surface which had already received electrolysis and various other methods for the destruction of the vessels and color without avail, and succeeded in obtaining an excellent result. The patient was exhibited.

Reducing the Number of Elements.—Prof. Sir William Crookes, before the International Chemical Congress in Berlin, dealt with the possibility of reducing all the elements of matter to one and ultimately finding this resolvable into a single form of energy. He sketched the significance of the Roentgen rays and Becquerel rays and the experiments of Curie and others, and said: "All these observations find internal connec-

An. engineer of Munich, Mr. Max Eberhardt, gave recently a demonstration of the effectiveness of a new tion in the discovery of radium, which is probably the basis of the coarser chemical elements here. We stand on the border line where matter and force pass into each other. In this borderland lie the greatest scientific problems of the future. Here lie the final realities, wide-reaching and marvelous."

Surgery Versus the Pulpit.—It appears that the surgeon of the future is likely to replace the minister and all the elements of moral suasion for the reform of the wayward. A New York exchange (*Amer. Medicine*), contains the following news from London: One of the patients was a boy of good family who had developed brutal instincts which seemed to be beyond control. He gave his time to the invention of malicious mischief, delighted in killing or wounding, was the terror of the neighborhood in which he lived, and promised to grow up a desperado and criminal. A clever surgeon took him in hand, examined his head with care, located what he considered the seat of the trouble, removed a portion of the skull, and thus relieved the deforming pressure. The change was immediate. The lad forgot his previous tastes and habits and was restored to his parents a normal and lovable boy, the complete antithesis of his former self. The other was a soldier who was injured in a skirmish, and after his discharge for disability became a thief and burglar. His previous character had been unexceptionable, his military record was the best, and the change was naturally attributed to the injury to his head, caused by a blow from the butt of a musket. When he was taken in hand by the surgeons he had about come to the end of a career of crime, being paralyzed on one side and unable to get about except on crutches. A depression in the skull sufficient to bring an abnormal local pressure upon the brain was found and an operation was decided upon, which restored his physical powers as well as his mental and moral faculties. His discharge was secured and he has since lived an industrious and honest life, with no evidence of a disposition to go wrong.

—The *St. James Gazette* says: The opinion of Dr. Forbes Winslow, the eminent specialist on brain disorders, that the racing motor has outdistanced the powers of the man who drives it, is borne out by the fact that a new disease called 'motor intoxication' has been discovered by the savants of Paris. It is the temporary mental disorder of speeding automobilists. M. Hachet Souplet, at the last meeting of the Societe d'Hypnologie et de Physiologie, spoke of the intoxicating effect of rapid motor locomotion. The mental and moral state of the driver become abnormal. He grows vindictive, furiously aggressive, and lets himself be carried away by the angry impulse of the moment. The high rate of speed works him up into the very same state of mind which makes the habitual drinker of alcohol regardless of consequences.

—An official attempt will be made in New Jersey to destroy mosquitoes in early life by admitting full flow of the tide to the marshes so that small sea fish may come in to feed upon the wiggle-tails. The State entomologist has found that oil upon the water to smother the larvæ has but temporary effect.

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It is easy in the world to live after the world's opinion; it is easy in solitude to live after our own; but the great man is he who in the midst of the crowd keeps with perfect sweetness the independence of solitude.—Emerson.

MEDICAL UNION.

MEDICAL union the principle upon which the *Times* was founded, is rapidly reaching consummation.

The time has come when all physicians are willing to "Prove all things; hold fast to that which is good," and that is the position assumed in scientific medicine to-day. There is nothing worth having in medicine which cannot now be included in the curriculum of a united profession.

It appears that the majority of the profession have adopted measures so catholic, that there is no longer room for sectarian designation. It will take some time necessarily to restore confidence, after these many years, but a little forbearance and patience will bring about the desired end.

There still seems to be fear on the part of some as to the consequences of complete medical union, and the question is asked, "What will become of us and our institutions in such event?" The answer is plain, that the fittest will survive. An individual or a principle which cannot stand without support, will surely perish.

There is great need of weeding in all our therapeutic methods. There is much that is fake, deceptive and fanciful, and on the other hand there is an inclination on the part of many to condemn without examination. There is much that may be learned even from our grandmothers.

No one will claim now, I think, that a School of Medicine should be founded upon a single principle, however important. If the followers of Hahnemann had accepted his advice, they would never have founded a school of practice with a sectarian name, for none have written more positively against it than he.

The profession is now in a position to investigate anything that comes up and accept or reject according to circumstances.

The American Medical Association has removed the only barrier which has so long stood in the way, and now it remains for others to finish the work. A committee of the Medical Society of the State of New York says in this connection:

"Appreciating the fact that no further barrier stands in the way of unifying the profession of the State of New York into a single State Society, the committee representing the Medical Society of the State of New York would respectfully ask the New York State Medical Association that further conference with its representatives be arranged with the object of speedily settling upon a definite plan which shall form the basis for amalgamation of the two existing bodies. In making this request the committee representing the Medical Society of the State of New York assures the Association of its earnest desire to increase the influence of the State profession by the action suggested; that it would further state to that body that it is ready to suggest to the Medical Society of the State of New York that it amend its charter to continue, consolidate and amend Chapter 138 of the Laws of 1806; Chapter 94 of the Laws of 1813, and Chapter 452 of the Laws of 1900 for the purpose of cultivating and advancing the science of medicine, the promotion and protection of public health, and the establishment of a death benefit fund for the dependents of the members of the Medical Society of the State of New York. That it feels justified still further in assuring the Association that it will recommend to the State Society the method of organization founded upon the plan suggested by the American Medical Association and considered by the joint conference when in session in April 1902, and that all other matters of detail which must be considered before final action can be taken by the respective societies, must, of necessity, become subjects for conference."

Now, if the other State Medical Societies will drop their sectarian titles, there is no obstacle in the way of uniting the whole profession of this State under one banner, with dishonor to none.

We note with pleasure that St. Louis has taken a step ahead in this direction by the formation of a Hospital Board regardless of School of Practice.

SURGEON GENERAL'S REPORT.

THE Surgeon-General's recent report shows the death-rate in the army to have increased from 13.94 per thousand in 1901 to 15.49 for 1902.

During the latter period, cholera was prevalent in the Philippines, with a death-rate from that cause of less than four to the thousand.

An important item in this report is the comparative health of soldiers according to race. It has been generally thought that negroes would be better adapted to the Philippine climate than whites, and an army composed exclusively of negroes and Asiatics has been suggested.

The figures are in favor of the white soldiers, the negro troops making the poorest showing. The mortality with the white soldiers was 14.40, the Malay scouts 24.04, the negroes 24.11 a thousand.

These figures appear to indicate that the white sol-

dier is to be preferred for service in tropical climates, notwithstanding its debilitating influence.

On the subject of alcoholic drink in the army, it is shown that out of five thousand native Filipino scouts in the service, only three were treated for alcoholism in the year and white soldiers were admitted to sick report on account of their own misconduct in the use of alcohol at the rate of 24.78 a thousand and colored troops at the rate of 11.70. The Malay scouts showed the extremely small admission rate of 0.62 a thousand.

It is the general consensus of opinion of army men, that the abolition of the canteen is responsible for the increase of intemperance and disease and General Grant has made a plea for its re-establishment as the least of two evils. The Surgeon General adds his opinion as follows:—

"It is impossible not to attribute a large part of the steadily increasing disease of the army to the loss of the canteen, where the soldier, if he so desired, could get his beer throughout the month, but was not subjected to the temptations to intemperance and vice now attendant on the expenditure of a full month's pay at the low resorts infesting the outskirts of our military reservations."

The report is worthy the careful study of those who are interested, and the important questions which it raises, should be considered from an unprejudiced standpoint.

A NEW TREATMENT OF SHOCK BY CONTROL OF THE BLOOD PRESSURE.

ACCORDING to a recent article in the Boston *Evening Transcript*, a series of experiments is now being conducted in the two principal hospitals of that city, which give promise of yielding important results in the modification of both medical and surgical treatment. The object of the investigation is to ascertain by a study of the variations of the blood pressure in health and disease, how to determine the curative action of drugs, of food, and of various other agencies. The instrument employed for this purpose in the Boston Hospitals, is described as essentially "An elastic rubber tube which can be put around the upper arm and inflated with air until the pulse below the tube cannot be felt by the finger touch; and a tube containing a column of mercury whose base is subject to the pressure of the confined air in the tube bandage." The indications are read off on a scale marked in millimeters. The pressure on the instrument being equal to the blood pressure in the underlying artery, the best form of this sphygmomanometer will show by the varying height of the mercury column the pressures at the ventricle and auricle beats, from which the mean arterial pressure may be calculated. The average mean arterial pressure in healthy individuals is shown in this way to be rather less than 100 millimeters. In diseased states the average mean pressure has been found to be 155 millimeters. Tuberculosis cases gave an average pressure of only 120 millimeters.

Typhoid fever gave pressures of about 130, while in Bright's Disease and diabetes the pressures mounted to 210 and 220 millimeters. It has been found that a very great number of pressure observations covering all bodily states, are required before general deductions from them can be safely made.

The object of Dr. Crile's brilliant work, we are informed, is to determine how to treat shock by control of the blood pressure, and an outline of his discoveries will serve to show the points which are included on the surgical side of this inquiry. The leading phenomenon in cases of shock is a fall in blood pressure. This fall is known to be the result of exhaustion—exhaustion, that is, of the muscles or nerve centres of the heart, exhaustion of the blood vessels, or, finally, of the great vaso-motor centre at the base of the brain, which controls the tension of the arterial muscles.

By a process of exclusion it was found that exhaustion of the vaso-motor centre was the cause of shock. What then must be done to raise the blood pressure?

In cases of shock, surgeons have long been in the habit of administering strychnia. Now, in Dr. Crile's experiments, the vaso-motor centre was over-stimulated even to complete exhaustion by repeated doses of strychnia, the blood pressure finally sinking to the same level as in profound shock. This level once reached, no other form of stimulation was effective in raising it. From this it was a necessary conclusion—despite the accepted theory—that vaso-motor stimulants in the treatment of shock are not only useless but positively harmful. In confirmation of this, it was found that shock in animals, for experimental purposes, was most conveniently and thoroughly produced by the administration of physiological doses of strychnia. The injection of saline solution—another common resort—proved useful only as a purely mechanical aid, which raised the blood pressure for but a short time, and could cause death by suffocation through accumulation of water in the blood vessels.

The outcome of all the experiments appeared to be that peripheral tension—external pressure on the body—was the proper mechanical resort in the treatment of shock, while the only effective drug was adrenalin. As the vaso-motor centre becomes exhausted, the blood begins to collect in the veins, just as happens after death. Pressure applied to the whole surface of the body by clothing the patient in an air-tight suit, which is then inflated, causes a movement of the blood in the distended veins back toward the heart, just as would be the case in restoration of the normal vascular tone. These two methods, in the one clinical test Dr. Crile made prolonged for nine hours the life of a patient who was dying when the application was made.

As to Adrenalin, its use requires caution, and its effects are not yet fully known. But the facts Dr. Crile has established are certain to produce great changes, in both medical and surgical practice. Observation of blood pressure, undoubtedly, will not only show something of a patient's ability to withstand an operation, but will, when the operation is in progress, furnish a most valuable indication as to how the operation is affecting the all-important vaso-motor centre on which the natural circulation depends.

THE NEW QUACKERY.

THE time was when the term *Quack* implied that a physician was lacking in skill and knowledge. Of late years, the word has come to mean one who does not conform to the ethical standards of the medical profession. For instance, we have heard it said that Dr. So-and-so is a gentleman and a scholar and a splendid operator, but a quack. On the other hand, the rather dubious defense of another physician, to whom this epithet had been applied, was that while he did not know enough to treat a sick cat, he was perfectly regular in his methods and in good standing in the profession. Indeed, it is perfectly possible that, in the near future, it will be ruled that it is no more libellous to call a man a quack than to state that he advertises in the newspapers, or to use the rather unwieldy term "advertising specialist," or the sectarian name "eclectic" which has been appropriated by many advertising physicians, without regard to the tenets of the old eclectic school, many of whose members in certain parts of the country, were perfectly professional in their methods of practice.

Thanks to increased influence of the regular medical profession with legislatures, and to the growing good sense of the community, many states are practically free from the old-fashioned peripatetic quacks who relied on the attractions of a circus tent and a ventriloquist show or on hand bills which announced the rare and short-lived opportunity to consult a learned professor from New York. A few such wanderers remain, and the Indian or other herb doctor may still be found in the market-place but, for most of the eastern and central states and some of the western, the old form of quackery is a dead issue. With a single notable exception—and with the exception of nomenclature already mentioned—sectarian bodies have also practically disappeared from the field of medical practice. The homoeopathic school still flourishes as an organization in the United States, but it is in perfect accord with the regular profession so far as ethics is concerned, its members show a praiseworthy spirit of co-operation in all educational, sanitary and legislative movements, comparatively few now emphasize to the laity their peculiar tenets or even pretend to hold to the extreme views of their early leaders and there is every probability that this school will, in the comparatively near future, be merged with the general professional body.

But the problems of the past have given place to others of perhaps even more serious nature, because, following the tendency of all sociologic development, we have to deal with organized opposition to ordinary medical practice. The quackery of the present century is of two essentially different kinds: first, new sects which claim to be substitutes for, rather than rivals of, historic medicine; secondly, practitioners of medicine and surgery who do not differ materially from the practical and scientific standpoint, from the regular medical profession, but who cut loose from professional and ethical standards and appeal to the people as merchants and advertisers of a particular kind of commodity. The former kind of quackery is most typically represented by the Christian Scientists, the latter by the great patent medicine corporations and advertising specialists.

Persons strongly appealed to, by the mysticism and supernaturalism of Christian Science, faith cure, etc., fortunately do not represent the average intelligence of the country. It is a pity that such a minority exists, just as it is a pity that there are men anxious to buy gold bricks, to secure 100 per cent. investments, or to go counter to the laws of common sense and human possibility in any other activity of life. But there will always be—till the millenium—a portion of the race who may not be actually insane, but whose methods of thought are out of harmony with sound reason. Popular opinion is with the medical profession, in regard to supernaturalism in medicine, and the sole danger is that a fictitious strength may be given to Christian Scientists by impossible efforts at forced conversion, which will allow them to claim the sympathy of martyrdom.

Substitutes for ordinary medical methods which are shrewd enough to hold out the inducement of mysticism without claiming supernatural power, are more formidable enemies. In this class, we have osteopathy, the Keeley Cure, etc. All such methods have the specious advantage of simplicity and directness. The people want them as it does trousers that will not bag at the knees, razors that will not become dull, street railroad and gas companies that will furnish good service at impossibly cheap rates, small chemic batteries that will run automobiles and elevators, dyes that will not fade or wash out, and various other eminently desirable achievements. When a man or a body of men, apparently well informed and honest, at least so far as the crude limitations of criminal law are concerned, make definite claims of being able to accomplish certain ends in an efficient and simple manner, it is only natural that they should be believed by those not specifically able to judge as to the absurdity of their claims. Every great achievement of modern science lends credence to the imposter and it is unreasonable to expect that the inexpert will readily appreciate the absurdities that seem so patent to those of us who have long been drilled in the limitations of medical art. Almost no one realizes in advance, the impossibility of making headway against a wind of thirty miles an hour, until he has actual experience with a bicycle. We confess personally to a serious attempt to run a centrifuge with a chemic battery. Without actual practical experience, it is impossible to distinguish the plausible from the true. But the success of all one-idea forms of quackery is measured by the time which it takes the people to discover that medical art can not be reduced to one particular rule of thumb. To be sure, one quackery will succeed another, but each demonstration of the inadequacy of any but the broadest and best instructed minds to deal successfully with disease, will reduce the possible clientele of the quack.

The other and more insidiously dangerous form of quackery, makes no claim to substitute some peculiar system for ordinary medical treatment. It merely drops the professional ideal and places medicine on the basis of a business, to be advertised with the same relative disregard for truth as any other business. The business is conducted on the ready-made and made-to-order plans, some firms combining the two. Although the sale of patent medicines is still enormous, the

people are beginning to realize the inadequacy of their own diagnostic powers, except for cathartics and general tonics, asthma remedies, etc. The very multiplicity of patent medicines and the habit of many pharmacists of borrowing some doctor's favorite prescription and bottling his own cough cures, etc., has doubtless had a beneficial tendency in shaking the faith of the ignorant in this class of medicines. Blind devotion to a few public benefactors who distributed almanacs, hand-books of disease, etc., was possible, but with a confusing number of benefactions, all "just as good" and some made by druggists whom the people know, at close range, as very mediocre men, the popular awe has given place to a general scepticism. In many simple cases, the results of patent medicines have been such as to encourage the habit of self- medication. The reason is obvious; very few patent medicines are out-and-out frauds; they are just such prescriptions as have been written by the rank and file of the medical profession for a century or more; on account of the necessity of avoiding acute toxic symptoms, drugs of marked physiologic action and, therefore, of particular efficacy when properly used, are debarred; the ultimate action of many is unfavorable on account of the alcohol or opium contained; still there must remain many instances in which the patient happened to need the particular prescription which he got; indeed, there is no denying the fact that until quite recently, our lax educational laws allowed the graduation of a considerable minority of physicians whose practice was little better than the choice of a wholesale prescription by an ignorant patient. On the whole, however, the laity have gradually been learning that patent medicines, by wasting valuable time or by actual inappropriateness, cause more work for the regular profession than they avoid.

On the whole, the only serious form of quackery which exists is that of the made-to-order dealer, who enters practice with the same medical training as the regular practitioner, who often has had the highest preliminary education, who examines urine, counts blood, avails himself of the X-rays and differs from the professional physician only in his lack of the benefits of affiliation and his undignified business methods. This problem is one of the greatest difficulty and its discussion must be deferred to another time.

INSANITY EXPERTS.

IF a Boston newspaper's statement is correct, an eminent alienist, Dr. Walter Channing, of Brookline, has rather startled his fellow specialists by certain views he has expressed on the question of expert testimony, which, if followed out, will probably bring about a great change in the practice of courts dealing with insanity.

The law now declares that insane persons cannot tell the difference between right and wrong, and therefore are not responsible for the crimes that they commit. Dr. Channing, on the contrary, contends that many insane people do have a general sense of right or wrong, and that they can judge as to the consequences of their acts pretty fairly on any subject not associated with their particular delusions.

Medical experts, therefore, he argues, should no longer be allowed to go into court to testify as to the accountability of insane persons for the crimes they commit. As he regards it, this is not a medical question, but a legal one. The courts should decide that and not the expert. The expert can say whether the man has delusions, whether any portion of his brain is paralyzed, whether he is a paranoiac or is mentally sound. Those are medical questions, but after describing the man's symptoms and identifying his mental disease, the expert should go no further.

As the editor puts it, "If this view should hold good in all the courts of this country there would be fewer cases of disappointed justice. Under Dr. Channing's proposed method even an expert's testimony as to insanity would be no bar to punishment, unless the court itself should decide that the accused did not realize that he was committing any crime. There are few such cases. Dr. Channing's investigations have shown that many insane criminals know what they are doing and trust to luck to escape punishment."

"DYING TO SLOW MUSIC."

IT was discovered some time ago, says the *Tribune*, that a musical note of a certain pitch, electrically produced and loudly sounded, would kill all mosquitoes within hearing. The note in question is that known as D—appropriately reminiscent of the "Big, Big D" of lyric fame, an objurgatory initial said not to be altogether unknown to some victims of mosquitoes' pernicious activity.

Still more interesting is the fact that this lethal note is identical with that uttered by the female mosquito in calling the male. That, however, is not all of it. Professor Ebenezer Wayback, of Podunk Crossroads, has discovered that the mosquito slaying note can be effectively produced by other than electrical devices. Being kept awake one night last week by the persistent snoring of Mrs. Wayback, he was agreeably surprised to find that he was not troubled at all by the mosquitoes which during the evening had swarmed in the room, and the next morning he observed their defunct bodies lying thickly upon the counterpane. The next night, while Mrs. Wayback again slept and snored, he conducted experiments with a pitch-pipe, which demonstrated that the dominant note of her snoring was identical with the D so fatal to mosquitoes. Further experiments showed that by the proper adjustment of a clothespin upon the nose any sleeper could be made to emit the same note. As soon as this was made known by Professor Wayback to his townsmen a wholesale raid was made upon the stock of clothespins at Deacon Ezra Dogood's grocery, and the next night not a single mosquito bite was suffered by any resident of Podunk Crossroads.

The public-spirited professor having given this beneficent invention freely to all the world, henceforth mosquito netting and pennyroyal and all other such devices may be laid aside. Armed merely with his own native nose and a stout clothespin, every man may be his own mosquito annihilator, destroying his would-be tormentors while he is sleeping the sleep of the unstung. Dying to slow music! It is a melodramatic ending, well fitted to the immemorial bane of the human race.

PHILIPPINE CLIMATE AND FLORA.

THE acquisition of the Philippine archipelago through our war with Spain has placed under the control of the United States one of the largest group of islands in the world. It embraces a territory larger than the States of New England, New York and New Jersey, containing 123,668 miles in land, and 705,115 miles in water, a total in the entire archipelego of 832,968 miles in land and water. The group is bounded on the north and west by the China Sea, on the east by the Pacific Ocean and on the south by the Celebes Sea and Borneo, and was undoubtedly in prehistoric times part of a great continent which included the Malay Archipelago and Australia, and which has in different ages of the world been torn into fragments more or less extensive, by the convulsions of nature. The Negritos, the aborigines of the Philippines and still quite numerous in the central portions of the islands were also the aborigines of Australia. The Malay's, which form a large portion of the population of these islands, are the same in form and language, and undoubtedly of the same origin.

Being located in the Torrid Zone, the climate is as might be expected, moist and warm, the temperature ranging from 80 to 84 degrees the entire year. In general, the physical structure of the archipelago belonged to the succession of lofty ranges of mountains of volcanic origin which form the crust and water sheds of the Pacific basin of the earth's surface.

There are fifty volcanoes in the archipelago, twenty of them being more or less active. The distribution of the Igneous Rocks indicate the prevalence of a number of volcanic belts. When compared with those zones of subterranean activity which constitute such a dominant feature of the Malaysian group, it becomes almost conclusive that the volcanic structure of the islands must have an important relation to the entire region.

So little is known respecting the climate, geography and resources of the thirteen principal islands, and the 1,583 dependent islands, which form the Philipine Archipelago that the War Department of the United States has recently issued a gazetteer giving accurate information from official and other sources of the present condition of this region. The information in reference to mineral springs and medicinal plants may be of special interest to our profession. The island abounds in mineral waters of temperatures from cold to thermal of all degrees to boiling. They are of the same character as the Hot Springs of Virginia and Arkansas and the other leading sulphur, saline, alkaline, purgative of this country and Europe. One of the most famous of all the springs is located about 35 miles from Manilla, and is the resort of thousands. The waters are strongly impregnated with sulphate of soda magnesium sulphates, as at Sedlitz and Carlsbad, Bohemia. The Chalybeate Springs containing salts of iron and of arsenic is even better than the famous spa at Belgium.

The Philippine flora embraces a large variety of plants of medicinal value. In addition to the large number of aromatic plants often used medicinally, such as tobacco, coffee, cocao, nutmeg and mace, betel and cinnamon, the Philippine flora embraces a large number of plants of purely medicinal value. Among them may be included blocanade; the oil of the seed when rubbed into the scalp is said to kill all kinds of vermin. Bacao bark pulverized and mixed with water furnishes a remedy for all kinds of intestinal parasites. Paetan, especially useful as a antidote for fish poison and a remedy for ulcerating sores. | Alactayo, its leaves are applied to the abdomen of pregnant women to bring on parturition. An infusion of the leaves of taraje for chlorosis—ditain; is employed in place of quinine for all kinds of fevers. Strychnos-ignatii Berg, the seeds of its fruit have various medicinal or antidotal uses—stomachic, emetic, styptic, for paralytics, for women during parturition, for malarial fever, for rheumatism and indigestion, for contraction of the nerves, and pain in the body. Of all the trailing plants in the island this is probably the more highly esteemed and more widely used for its larger range of action. The resins, gums and essential oils are numerous and will undoubtedly, as they are more generally known, come into extensive use. Many of the medicinal plants found in these islands are now being carefully investigated by the medicinal staff of the army and will, as their virtues become ascertained, be utilized by our pharmacologists and introduced into the materia medica.

IN the treatment of morphinism if the drug is suddenly entirely withdrawn the sufferings of the patient are intensified and often dangerous. Instead of continuing the drug in diminished doses hyoscine has been found to fill its place until the crisis is past, as does chloroform or ether in the practice of surgery. It saves the patient from indescribable suffering, enabling him to escape the nerve strain and shock that would have necessarily attended the sudden withdrawal of morphine. Before giving the hyoscine the bowels should be freely purged to cleanse the system of accumulated toxins. Hyoscine is then given in doses repeated every half hour to three hours until its action is established. Pettey, who has had a large experience in the use of hyoscine says that forty-eight hours is the extreme limit of time for which the drug is necessary. In all cases which have come under his observation the patients were entirely freed from any desire for morphia after that length of time, and began to rapidly recuperate. The dose should be from 1-100 to 1-200 of a grain administered either hyperdermically or by the mouth.

PROFESSOR KOSSEL, of the Imperial Health Office of Germany, recently reported the prolonged experiments of the tuberculosis commission in injecting calves with human tuberculine. The commission was appointed by the Health Office after Professor Koch's celebrated London address to make systematic experiments. The inoculations were made, not with matter taken directly from human victims, but with cultures made therefrom. The experiments covered thirty-nine separate cultures—twenty-three from adults and sixteen from children. Nineteen cases subcutaneously treated did not show the slightest effect, nine showed after four months the slightest changes of condition and some showed more marked symptoms, but the propagation of tubercles in the body did not occur. On

the other hand, four inoculations from tuberculous children infected calves with a disease which resembled a weak type of animal consumption, and two of this number died from tuberculosis. The commission summarizes it as follows: "The series of experiments strengthens Professor Koch's view that animal consumption as the cause of human consumption does not play the role generally attributed to it, but definite judgment requires further experimentation."

In the discussion which followed, Professor Orth, the late Professor Virchow's successor, strongly combatted the view that human and animal consumption were dissimilar and non-transferable. Mr. Robin in the *Revue de Paris*, makes a voilent attack on the increase of sanitoriums for the treatment of tuberculosis. He would substitute firstly, far stricter laws regarding general sanitation and secondly, the careful feeding of consumptive patients at home. He declares, what is generally admitted, that in tuberculosis prevention is not only better, but more easily achieved than cure, and gives a striking instance of a certain trend where altered (longer) hours suddenly increased the number of consumptive workers. Instead of those being affected being sent off to a sanitorium, the conditions of their labor were lightened, and at once the percentage of tubercular cases fell to normal. Prevention is undoubtedly more easily secured in tuberculosis than in any other disease of a like fatal character; but this can only be accomplished under the direction not only of proper instruction, of hygienic rules in our public schools, but of the most positive and stringent forms of legislative enactments in which the proper construction of all buildings intended for human habitation shall be carefully provided for as well as the intelligent inspection of every variety of food to secure their purity and healthfulness. This, however, must be the work of time and is now to a certain extent being accomplished. We have also to deal with the present and meet the disease as it exists in our community either in its incipient state or in the later stages of its progress. For these conditions canitoriums are not only called for, but those which have already been established have contributed vastly by their intelligent work to a proper understanding and treatment of the disease. A very important step has been taken by the City of Brighton in England, by establishing a sanitorium constructed upon the most scientific principles of ventilation, where patients in the incipient stage of consumption are sent for a month, less for medical treatment than for instruction as to correct habit of living, the necessity of sunshine, fresh air, exercise and proper food which, in the majority of cases, if continued, leads to a restoration of health. In the meantime, their own houses are disinfected, and on their return the practical instructions they have obtained in the sanitorium are carried out with the most beneficial results. The increase of this form of sanitorium would certainly be a most important step in the line of prevention.

RATIONALE OF THE DIET IN TUBERCULOSIS.

So far as our positive knowledge on the subject at present extends, fresh air and food are the only remedies for tuberculosis. The food, as was long ago learned from clinical experience, should consist as largely as possible, of fat. The reason, however, why fat is so necessary as it is found to be in the dietetic treatment of tuberculosis has only lately been suggested. From the researches of Dr. de Schweinitz, as set forth by him in the transactions of the American Climatolgical Association, Volume 18, 1902, it appears that the hitherto empirical use of fat in tuberculosis can be fully explained on bacteriological grounds, in connection with his observations on the composition of tubercle bacilli derived not only from the human subject, but from various species of animals. Dr. De Schweinitz, nearly ten years ago, ascertained that tubercle bacilli are composed almost wholly of fatty or waxy substances, which he succeeded in extracting by means of alcohol and ether. In order to grow rapidly and luxuriantly, therefore, they must obtain a constant and abundant supply of fatty material, as this is being carried through the lungs in the venous blood. Now, when an individual is rapidly losing weight, his fat is taken up from where it has been deposited in the body tissues, and passes into the blood stream, and so into the lungs, where it is appropriated by the tubercle bacilli. But when the fat remains in the body tissues, as it does in well nourished subjects, it is, of course, not thus carried into the lungs, the tubercle bacilli are deprived of the pabulum they most desire, and consequently cease to grow. Here, in brief, we have a satisfactory explanation of the good results uniformly observed from feeding a consumptive all the fat he can be made to assimilate, and an additional proof of the utter uselessness of drug medication in these cases.

When the life of our President is in peril, the public becomes aware of the danger of allowing "harmless cranks" to be at large. The alienist knows how important it is that the general public should be protected against this species, to say nothing of our duty to the "crank." The unbalanced mind is most sensitive to the power of suggestion, and reports of acts of such individuals is sure to awaken the impulse in others. It would be better that suspected persons should be promptly placed under the observation of a competent alienist to the end that the lives of others may be safeguarded. The layman who is absolutely ignorant upon the subject should not be allowed the responsibility of deciding so important a subject. Legislation in this direction would be advisable.

—The question "Was Mohammed an epileptic?" is discussed by Dr. M. L. Moharrem Bey (*Jour. of Nervous and Mental Disease*), and after reviewing the case in its various aspects, he concludes, from a purely medical standpoint, that there is no basis for the assumption that the prophet was thus afflicted. He calls attention to the character of the so-called attacks when he would lie down on the floor and would be covered with a garment and have a pillow placed under his head by those near him, and distinguishes them from the genuine epileptic attacks. These attacks were not followed by stupor, but the prophet would arouse himself quickly and begin at once to relate his divine revelation. Furthermore, the character of his intelligence, which was maintained until his death at sixty-three of an acute febrile disease, rules out the possibility of his having suffered in any degree from epileptic dementia.

BIBLIOGRAPHICAL.

A Text-Book of Surgery for Students and Practitioners. By George Emerson Brewer, A. M., M. D., lecturer on Clinical Surgery at the College of Physicians and Surgeons, Columbia University, New York; Attending Surgeon to the City Hospital, etc., etc. Illustrated with 280 engravings in the text and seven plates in colors and monochrome. Lea Brothers & Co. New York and Philadelphia. 1903. Pp. 706 octavo.

This volume presents clearly the accepted modern views of surgical pathology and treatment, in suitable form for the use of students and practitioners. The author has successfully resisted the natural tendency to make a treatise, when a manual is intended and required. The essential facts in practical surgery have been given as briefly as is compatible with lucidity, and no attempt has been made to review the historical aspects of the subjects, describe rare conditions or to enter into theoretical discussions, all of which would lead beyond the province of a comprehensive text-book. The book should be placed at the head of its class. The publishers have done their part in their usual excellent manner.

The Latin Grammar of Pharmacy and Medicine. By D. H. Robinson, Ph. D., Professor of Latin Language and Literature, University of Kansas, with an introduction by E. L. Sayre, Ph. M., Professor of Pharmacy. Fourth edition, with elaborate vocabularies thoroughly revised by Hannah Oliver, A. M., Assistant Professor of Latin, etc. Philadelphia. P. Blackiston's Son & Co. 1903. 12mo., pp. 277. Price $1.50.

This book is designed to meet the needs of the first year pharmacy and medical student, and the present edition has been revised and the text improved in the intrest of greater effectiveness. It will be found useful by all such students.

Manual of the Diseases of the Eye for Students and General Practitioners. By Charles H. May, M. D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, New York, etc., etc. Third edition, revised, with 275 original illustrations, including 16 plates with 36 colored figures. New York. William Wood & Company. 1903. Pp. 408, 12mo.

This book, intended for the student and the general practitioner of medicine, has been most carefully prepared to just meet this purpose, by confining the text to the fundamental facts, to cover all that is essential in this branch of medicine, for those to whom it is addressed. We know of no better book of its class, it is just what is required. The illustrations are original and excellent for elucidating the text. The author's extensive experience in teaching the general practitioner, makes him well qualified for this work. The rapid exhaustion of the edition shows that the manual has been appreciated.

Consumption a Curable and Preventable Disease; What a Layman Should Know about It. By Lawrence F. Flick, M. D., Founder of the Pennsylvania Society for the Prevention of Tuberculosis; President of the Free Hospital for Poor Consumptives of Pennsylvania; Medical Director of the Henry Phipps' Institute for the Study, Treatment and Prevention of Tuberculosis. Philadelphia. David McKay. 1903. Pp. 295, 12mo. Price $1.

This is a most excellent and useful treatise for the purpose intended. It contains just what the layman should know about this dread disease, in order that he may help to prevent its spread and aid in the cure. The book is worthy a place in every household.

Diseases of the Ear. A Text-book for Practitioners and Students of Medicine. By Edward Bradford Dench, Ph. B., M. D., Professor of Diseases of the Ear in the University and Bellevue Hospital Medical College; Aural Surgeon New York Eye & Ear Infirmary; Consulting Otologist to St. Lukes Hospital, etc., etc. With fifteen plates and 158 illustrations in the text. Third edition, revised and enlarged. New York and London. D. Appleton & Co. 1903. Pp. 718, octavo.

As in other branches of medicine, the advances made in Otological Surgery during the last few years has made a revision of this work also necessary, particularly the portion devoted to the operative treatment of Chronic Suppurative Otitis Media, and of the various intra-cranial complications of middle-ear suppuration. In the present edition the technique of all these major operations has been fully elaborated, and the author has laid particular stress upon those methods which, in his own experience, have proved most valuable. The work has been done in the interest of the general practitioner and the special surgeon, with a view to differential diagnosis and treatment. The author is known as a daring and skillful operator, fully abreast the times, and his book is written in a manner likely to convince others as to the favorable outcome of the operations he advises. A number of new plates have been added, all from original sources. The text is written in an interesting and easily read manner and the book cannot fail to have a wide perusal. The publisher has also done his part faithfully.

The Principles of Obstetrics, a practical Manual for the Student and General Practitioner. By Stanley Perkins Warren, M.D., Portland, Me., Obstetric Surgeon to the Maine General Hospital, Consulting Physician to the Maine Eye and Ear Infirmary, etc., etc., octavo; 385 pages; superbly illustrated by 165 line and half-tone engravings. Cloth, $3.00 net. Leather, $3.75 net. William Wood & Co., New York.

This work provides the student with a complete reliable text-book, covering the whole ground as embraced in the curricula of most schools, with all the fullness necessary to clearness, but omitting everything not essential or practical. The essenti- are given in plain and simple form, and the subject presented in the shape it will assume when put to practical use. As a working hand-book for the busy practitioner it will be much appreciated, teaching, as it does, how aseptic midwifery is perfectly possible in the private home, where expensive hospital appliances are impracticable. The illustrations are admirable, and the mechanical make-up of the best quality. The general excellence of the book, together with its moderate price, will undoubtedly commend it to all.

The Practical Medicine Series of Year Books. Issued monthly. Edited by Gustavus P. Head, M.D., Volume IX. Physiology, Pathology, Bacteriology, Anatomy, Dictionary. Chicago. The Year Book Publishers. 12mo., pp. 233. Price $1.25.

The busy general practitioner will find these books just what he wants to keep him abreast the times in all branches of medicine. The articles are short, concise, and cover sufficiently for practical purposes.

A Text-Book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Sixth Edition, Thoroughly Revised. Handsome octavo volume of 1300 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $5.50 net; Sheep or Half Morocco, $6.50 net.

This is the sixth edition of a most excellent work in as many years. Such a sale cannot but be a gratification alike to the author and to the publisher. In this edition the general plan and principles of classification adopted in the previous editions have been preserved. The many tabular presentations of points in differential diagnosis have been retained. Differential diagnosis is a most important branch of diagnostics, and this tabular method has no superior way of familiarizing the practitioner and the student with the outstanding features of simulating diseases. Malaria, yellow fever, bacillary dysentery, cholecystitis, certain animal parasitic diseases, and the use of the X-rays in diagnosis and treatment have been fully discussed, incorporating the results of the most recent investigations. Among the new subjects introduced are Paratyphoid Fever, the Fourth Disease, Trypanosomiasis Orthostatic, Albuminuria, Transcortical Aphasia, Adiposis Dolorosa, and Amaurotic Family Idiocy. Every affection has been treated separately, particular attention being paid to its clinical character, diagnosis, and treatment. Evidently an immense mass of lierature has been thoroughly digested, no pains having been spared to bring the entire work down to date, giving special reference to the daily needs of practitioners and students.

We have many times stated that this is one of the best text-books extant on the subject.

A Text-Book of Operative Surgery. Covering the Surgical Anatomy and Operative Technic Involved in the Operations of General Surgery. Written for Students and Practitioners. By Warren Stone Bickham, Phar. M., M.D., Assistant Instructor in Operative Surgery, College of Physicians and Surgeons, New York; Late Visiting Surgeon to Charity Hospital, New Orleans, etc. Handsome octavo of 984 pages, with 559 illustrations, entirely original. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $6.00 net; Sheep or Half Morocco, $7.00 net.

This work completely covers the surgical anatomy and operative technic involved in the operations of general surgery. It is constructed on thoroughly new lines, the discussion of the subject being remarkably systematized and arranged in a manner entirely original. A feature of the work to which we would call especial attention, and for which alone it is well worth the price, is the wealth of magnificent illustrations. There are 559 of them, all entirely original. They depict the progressive steps in the various operations detailed with unusual clearness, and at the same time represent the highest artistic excellence. The text is fully abreast of the latest advances in surgery, all the recent improvements along the line of technic being adequately discussed. Another feature distinguishing it from other works on operative surgery, is the treatment of the anatomic side of the subject in connection with the operative technic. The illustrations will be found of particular assistance in this connection, the muscles, bones, etc., being clearly indicated, together with the lines of incision. It is a work of rare merit.

A Text-Book of Obstetrics. By J. Clarence Webster, M.D. (Edin.), F. R. C. P. E., F. R. S. E., Professor of Obstetrics and Gynecology, Rush Medical College, in Affiliation with the University of Chicago; Obstetrician and Gynecologist to the Presbyterian Hospital, Chicago; Obstetrician to the Chicago Lying-in-Hospital and Dispensary, Chicago, etc., etc. Handsome octavo volume of 767 pages, with 383 illustrations, 23 in colors. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $5.00 net; Sheep or Half Morocco, $6.00 net.

This work has been written for the student of obstetrics, as well as for the active practitioner. The anatomic changes accompanying pregnancy, labor and the puerperium are fully and lucidly described. The exposition of these sections is based mainly upon studies of frozen specimens, in which department the author has had a large experience. Unusual consideration is given to embryologic and physiologic data of importance in their relation to obstetrics. The practical aspects of the subject are presented in such a manner as to be of direct assistance to the clinician. Diagnosis and treatment are presented with rare exactitude and clearness, particular consideration being given to those methods that have proved most successful by experience. The illustrative feature of the work is far above the average. Evidently great care was taken in the selection of the illustrations, aiming to meet the varied requirements of both the undergraduate and the practicing physician. Many of the illustrations are entirely original, having been made especially for this work, and never having appeared in any other text-book. The work throughout expresses the most advanced thought of the day in this department. The book is to be commended.

A Text-Book of Pathology. By Alfred Stengel, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Octavo volume of 933 pages, with 394 text-illustrations, many in colors, and 7 full-page colored plates. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $5.00 net; Sheep or Half Morocco, $6.00 net.

In this work the practical application of pathologic facts to clinical medicine is considered more fully than is customary in works on pathology. While the subject of pathology is treated in the broadest way consistent with the size of the book, a successful effort has been made to present the subject from a clinician's point of view. In the second part of the work, the pathology of individual organs and tissues is treated systematically and quite fully under subheadings that clearly indicate the subject matter to be found on each page. In this edition the section dealing with General Pathology has naturally received the greatest care and the most extensive revision. Several of the important chapters have been practically rewritten. Among the subjects that have received the greatest revision are: Ehrlich's Theory of Immunity and allied processes; Inflammation; The Bacterial

Diseases, including Typhoid Fever, Tuberculosis, Yellow Fever, and Dysentery; and Diseases of the Blood. In the second part of the book that treating on Special Pathology—the revision has also been considerable, so that this part likewise represents the latest advances in the subject of Pathology. A very useful addition to the book is that of an Appendix, treating of the Technic of Pathologic Methods, and giving briefly the most important methods at present in use for the study of Pathology; including, however, only those methods that are unquestionably practicable. Many new illustrations, including ten excellent plates, have also been added, and some of the old replaced by new ones. We do not hesitate to recommend the book to students and practitioners.

American Text-Book of Surgery. For Practitioners and Students. Edited by William W. Keen, M.D., LL.D., F. R. C. S. (Hon.), Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; and J. William White, M.D., John Rhea Barton, Professor of Surgery, University of Pennsylvania, Philadelphia. Fourth Edition, Thoroughly Revised and Greatly Enlarged. Handsome octavo of 1363 pages, with 551 text-illustrations and 39 full-page plates, many in colors. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $7.00 net; Sheep or Half Morocco, $8.00 net.

Of the three former editions of this work nearly 40,000 copies have been disposed of. Its sale, indeed, has been the wonder of the medical publishing world. In this present edition every chapter has been extensively modified, and many of them have been partially, and some entirely, rewritten. Notably among such chapters are those on Surgical Bacteriology, Tumors, the Osseous System, Orthopedic Surgery, the Surgery of the Nerves, the Joints, the Abdomen, etc. The most recent researches of Monks on the Intestines, Crile and Cushing on Shock and Blood Pressure, Matas on Neural Infiltration and Aneurysm, Edebohls on Renal Decortication, etc., have been included. The use of paraffine in nasal deformities, the methods of spinal and local anesthesia, and the newer anesthetics have also been described. And this is but an illustration of the completeness and thoroughness of the entire work.

Besides the extensive revision and amplification of the old matter, there have been added six new chapters of the utmost importance, written by men whose positions and experience especially fit them to speak with authority. These chapters are Military Surgery, Naval Surgery, Tropical Surgery, Examination of the Blood, Immunity, and Surgery of the Pancreas. Though there was a brief chapter on the Pancreas in the third edition, in this present edition it has been extended so greatly that it really is wholly new, the modern surgery of the Pancreas having been created since the last edition. A number of the old illustrations have been replaced by better ones, and, in addition, there have been added a number entirely new. In fact, we know of no single volume work that is superior in the expounding of the advanced and practical principles of modern surgery.

A Text-Book of Obstetrics. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. Handsome octavo, 900 pages, with 746 illustrations, 39 of them in colors. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $5.00 net; Sheep or Half Morocco, $6.00 net.

In revising his work for this edition, the author has spared no pains to make the book reflect the latest knowledge on the subject. He has even described and illustrated the method of using the "Neumann-Ehrenfest Kliseometer." His perfect familiarity and extensive experience with diseases of women is shown in the careful and minute manner in which he describes the various methods of treatment. As most all the diseases of women are the consequences or complications of childbirth, their preventive treatment at least is in the hands of the obstetrician, and the physician in general practice must be equally well informed in both branches of gynecology. The specialist in obstetrics must be an expert in the surgical treatment of all diseases of women. Even a specialist who confines his work entirely to this treatment, must at least have served a long apprenticeship in practical obstetrics, and have mastered its science to be adequately prepared for his work. In this edition every page has been altered and bettered in some way. More attention has been given than in the previous editions to the diseases of the genital organs associated with or following childbirth, and this we think, is an excellent improvement. Many of the old illustrations have been replaced by better ones, and there have been added besides a number entirely new. The work treats the subject from a clinical standpoint, the author ever keeping in mind that the aim of all medical literature is to cure.

A Text-Book Upon the Pathogenic Bacteria. For students of medicine and Physicians. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Philadelphia. Hospital and to the Medico-Chirurgical College, Philadelphia. Handsome octavo volume of 629 pages, fully illustrated, a number in colors. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $3.50 net.

This work gives a concise description of the technical procedures requisite in the study of bacteriology, a brief account of the life histories of the important bacteria, and sufficient description of the pathologic lesions accompanying micro-organismal invasions to give an idea of the origin of symptoms and the causes of death. Although but a short time has elapsed since the appearance of the previous edition, such rapid strides have been made in the subject of bacteriology, especially in its relation to pathology, that the author deemed it necessary to rewrite the work entirely. All the old matter has been eliminated, much new matter is in evidence, and, in fact, the subjects treated have been brought precisely down to date. What impressed us most were the chapters upon Infection and Immunity. All the new facts recently added to our knowledge of these subjects can here be found. The value of the work as a book of reference has been materially increased by the introduction of a large number of references to bacteriologic literature. These have been thoughtfully chosen, and, in nearly all cases, give the sources of the original descriptions of the micro-organisms treated, and the important methods described. Another valuable addition is a bibliographic index containing the names of over 600 authors.

Altogether the work in its new edition is very commendable, and practitioners and students will find it of unusual value.

A Text-Book of Clinical Anatomy. For Students and Practitioners. By Daniel N. Eisendrath, A.B., M.D., Clinical Professor of Anatomy in the Medical Department of the University of Illinois (College of Physicians and Surgeons); Attending Surgeon to the Cook County Hospital, Chicago, etc. Handsome octavo of 515 pages, beautifully illustrated with 153 illustrations, a number in colors. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $5.00 net; Sheep or Half Morocco, $6.00 net.

The subject of anatomy, and especially clinical anatomy, is so closely allied to practical medicine and surgery that it is absolutely impossible for a physician or surgeon to practice his profession successfully unless he have an intimate knowledge of the human structure. In his preface the author states that the primary object of his work is to serve as a bridge for both the practitioner and student from descriptive anatomy, as it is usually taught in the first two years of a medical course, to its daily application at the bedside, in the clinic, or in the operating room. The entire subject is discussed with a thoroughness and precision that spring from experience. The method of illustrating the subject is novel, special attention having been given to surface anatomy. The illustrations themselves are the result of a great deal of painstaking study, outlines having been marked upon a normal artist model, and then photographed. They are reproduced in the highest style of art, and show far better than any we have seen the relation of anatomic structures from a clinical standpoint, presenting to the practitioner a picture as met at the bedside, with the skin covering the tissue. The work is indeed magnificent, text, illustrations, paper, typography, and binding being of unusual excellence.

A Text-Book of Diseases of Women. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania; Gynecologist to the Howard, the Orthopedic, and the Philadelphia Hospitals. Handsome octavo volume of 675 pages, sumptuously illustrated with some 650 mostly original illustrations, many in colors. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $5.00 net; Sheep or Half Morocco, $6.00 net.

This latest work of Dr. Hirst's is on the same lines as his "Text-Book of Obstetrics." As would be expected from a practical teacher, diagnosis and treatment have been given particular attention. The palliative treatment, as well as the radically operative, is fully described, enabling the general practitioner to treat many of his own patients without referring them to a specialist. A feature which specially impressed us is the thorough manner in which the author has treated modern technic of gynecic surgery. An entire section is devoted to a full description of all modern gynecologic operations, illustrated and elucidated by numerous photographs taken especially for this work. The author's training in the subject of diseases of women has been like that of the specialists in the Teutonic countries of Europe, where gynecology has reached the highest level of perfection: namely, specialization in the diagnosis and treatment of diseases of women has followed a thorough training in the recognition and treatment of the complications and sequels of childbirth. This special training is evident throughout the entire work in the careful and thorough manner in which the subject is treated. The many illustrations are superb, with few exceptions entirely original, having been reproduced from photographs and water colors of actual clinical cases accumulated during the past fifteen years. We must heartily congratulate Dr. Hirst and his publishers upon the production of such a magnificent work.

Clinical Examination of the Urine and Urinary Diagnosis. A Clinical Guide for the use of Practitioners and Students of Medicine and Surgery. By J. Bergen Ogden, M.D., formerly Instructor in Chemistry, Harvard University Medical School, Boston; Assistant in Clinical Pathology, Boston City Hospital, etc. *Second Revised Edition.* Handsome octavo volume of 418 pages, illustrated, including 11 plates, 9 of them in colors. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $3.00 net.

The aim of this work, as we have said before, is to present in as concise a manner as possible the chemistry of the urine in its relation to physiologic processes; the most approved working methods, both qualitative and quantitative; the diagnosis of diseases and disturbances of the kidneys and urinary processes. It is a work eminently in demand, since most of the books on the urine are devoted exclusively to urinary chemistry, a knowledge of urinary diagnosis being obtainable only by an extended search through works on medicine, surgery, pathology, and chemistry.

In this, the second edition, special effort has evidently been directed toward making the text complete and bringing it absolutely down to the present day advances in the subject. Important changes have been made in Part I., especially in connection with the determination of Urea, Uric Acid, and Total Nitrogen; and the subjects of Cryoscopy and Beta-Oxybutyric Acid have been given a place. The changes in Part II., while not so extensive, are nevertheless numerous and practical, and show that the author has spared neither pains nor time in making the revision thorough. It is a good book, and both student and practitioner will find a valuable aid in their clinical work.

Nervous and Mental Diseases. By Archibald Church, M.D., Professor of Nervous and Mental Diseases and Head of Neurological Department, Northwestern University Medical School; and Frederick Peterson, M.D., President New York State Commission in Lunacy; Chief of Clinic, Department of Nervous Diseases, College of Physicians and Surgeons, New York. *Fourth Edition, Thoroughly Revised and Enlarged.* Handsome octavo volume of 922 pages, with 338 illustrations. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $5.00 net; Sheep or Half Morocco, $6.00 net.

This is the fourth edition of this excellent work in as many years. The revision, indeed, has been thorough, all the latest knowledge on the subjects having been incorporated, including the recent work regarding the healing of nerves. The subject of Intermittent Limping, now definitely known to depend upon a lesion of the posterior root ganglia, and Herpes Zoster have been given a section each. Another addition is the discussion of that form of epilepsy marked by

myoclonus, furnishing the so-called Combination Disease. Further importance has been given to symptomatology and symptomatic disturbances, and the diagnostic value of astereagnosis and of Kernig's Sign has been elaborated.

We also find that there have been added a large number of new and excellent illustrations. A useful addition to the portion of the book devoted to Insanity is a new section consisting of a critical review of the German Schools which have recently made such important advances in psychiatry.

In many ways this work will be found of unusual assistance not only to the specialist, but also to the student and general practitioner.

The American Illustrated Medical Dictionary. For Practitioners and Students. A Complete Dictionary of the Terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, and the kindred branches, including much collateral information of an encyclopedic character, together with new and elaborate tables of Arteries, Muscles, Nerves, Veins, etc.; of Bacilli, Bacteria, Micrococci; Streptococci Eponymic Tables of Diseases, Operations, Signs and Symptoms, Stains, Tests, Methods of Treatment, etc., etc. By W. A. Newman Dorland, A.M., M.D., editor of the "American Pocket Medical Dictionary." Handsome large octavo, nearly 800 pages, bound in full flexible leather. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Price $4.50 net; with thumb index $5.00 net.

The rapid exhaustion of two large editions cannot but be a gratifying proof to the editor and publisher that this excellent work meets the varied needs of physicians and students satisfactorily.

In this the third edition several hundred new terms that have been added to the vocabulary of medical sciences have been incorporated and clearly defined. The entire work, moreover, has evidently been subjectd to a careful revision, and many of the tables, notably those of Acids, Bacteria, Stains, Tests, Methods of Treatment, etc., have been amplified, and their practical value greatly increased. It is only by such constant and careful revision that a medical dictionary can hope to reflect the progress of medical science, and the usefulness of this work by this present revision has been very largely extended. This work stands in the front rank of its class.

The American Pocket Medical Dictionary. Edited by W. A. Newman Dorland, M.D., Assistant Obstetrician to the Hospital of the University of Pennsylvania. Containing the pronunciation and definition of the principal words used in medicine and kindred sciences, with 566 pages and 64 extensive tables. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Flexible leather, with gold edges, $1.00 net; with thumb index, $1.25 net.

In this little work, now in its fourth edition, we have a pocket dictionary of great value. It is a wonder to find so much information in such a small space. In this edition several thousand of the newest terms that have appeared in recent medical literature have been added, and the entire work subjected to a careful revision. We believe that the work in its new form will meet more fully than ever a real demand on the part of physicians and students.

A Dictionary of Medical Science. Containing a full explanation of the various subjects and terms of Anatomy, Physiology, Medical Chemistry, Pharmacy, Pharmacology, Therapeutics, Medicine, Hygiene, Dietetics, Bacteriology, Pathology, Surgery, Ophthalmology, Otology, Laryngology, Dermatology, Gynecology, Obstetrics, Pediatrics, Medical Jurisprudence, Dentistry, Veterinary Science, etc., by Robley Dunglison, M.D., LL.D., Late Professor of Institutes of Medicine in the Jefferson Medical College of Philadelphia. New (twenty-third) edition, thoroughly revised, with the pronunciation, accentuation and derivation of the terms, by Thomas L. Stedman, A.M., M.D., Member of the New York Academy of Medicine. In one magnificent imperial octavo volume of 1224 pages, with about 600 illustrations, including 85 full-page plates, mostly in colors, with thumb-letter index. Cloth, $8.00 net; leather, $9.00 net; half morocco, $9.50 net. Lea Brothers & Company, Philadelphia and New York.

A dictionary which has held its own through twenty-two editions and has satisfied the requirements of the medical profession for three-quarters of a century has become an indispensable institution. The very name *Dunglison* has long been synonymous with medical lexicography.

A glance through the successive editions of this work brings home the marvelous advances of medicine during the past seventy-five years, a gain more than equal to the total medical knowledge recorded during the entire previous history of mankind. The number of words new in this edition, after the exhaustion of its predecessor in the short space of three years, shows that each day adds two terms to the science. Progress accelerates itself, and as medicine is now definitely proceeding in the line of precision, its terminology is growing not only in quantity but also in quality, so that it becomes increasingly important for both students and practitioners to keep always conversant with the latest words and meanings.

With this constant increase in the number of medical terms the editor's chief problem has been economy of space. In the present edition it was necessary to accommodate not only all the new words but also the illustrations, now first introduced. These are almost indispensable in explaining certain subjects which defy definition in a few words, but they are enormous consumers of space. The problem was solved by eliminating everything obsolete, or of only indirect bearing upon medicine.

A distinguishing feature of the successive editions of this dictionary has been the explanatory fulness and encyclopedic nature of its definitions. As the author wrote in the preface to the second edition, his object "was not to make the work a mere lexicon or dictionary of terms, but to afford under each a condensed view of its various medical relations, and thus to render the work an epitome of the existing condition of medical science." It has been the editor's purpose to preserve in the new matter this characteristic of the work, and not to give merely a bald definition or array of synonyms, but to explain the subject denoted by the term.

The labor of revision has been performed with laudable ability and conscientiousness by Dr. Thomas L. Stedman, whose editorship of the medical terminology

of the Standard Dictionary amply proclaimed him as well fitted for the task.

As indicated on the title page, this dictionary is intended to be a book of universal service for all interested in the medical sciences.

Constitutional Therapeutics. "The patient; not the disease." By A. W. Woodward, M.D. For twenty-five years a teacher of Materia Medica and Clinical Therapeutics in the Chicago Homoeopathic Medical College. 557 pages. Linen, $3.50. Postage, 25 cents. Philadelphia. Boericke & Tafel, 1903.

The symptomotologist will doubtless find this volume instructive and useful. The author had his own theory of therapeutics and it is largely to develop this that the work has been issued. There are many clinical cases reported, mostly from the older literature.

A Classified Index of the Homoeopathic Materia Medica for Urogenital and Venereal Diseases. By Bukk G. Carleton, M.D., Professor of Genito-Urinary Surgery in the New York Homoeopathic Medical College and Hospital, and Howard L. Coles, M.D.; octavo, 160 pages. Price, $1.50. New York: Boericke & Runyon.

A Handbook of the Diseases of the Eye and Their Treatment. By Harry R. Swansy, A.M., A.B., F. R. C. S. I., Surgeon to the Royal Victoria Eye and Ear Hospital, and Ophthalmic Surgeon to the Adelaide Hospital, Dublin, ex-President of the Ophthalmological Society of the United Kingdom. Eighth edition revised, with 168 illustrations and Zephyr card of Holmgren's tests. Philadelphia: P. Blakiston's Sons & Co., 1903. 580 pages, octavo. Price $2.50.

This book which was mainly intended for students has found great favor with this class as well as with general practitioners. Edition after edition has rapidly succeeded each other, until now it has reached the eighth, each time being revised and brought thoroughly up to date. The author is correct in saying that the great difficulty in the preparation of a book like this consists in "saying not all he might, but all he ought," and this author seems to have the faculty of giving a succinct and practical account of his subject in its most modern aspects, and this is the reason why his work has been found so useful, and has become so popular with the profession. Many changes and additions will be found in the present edition, which make it far superior to its predecessors. The physical part of the work is all that can be desired.

Diseases of the Nose and Throat. By Charles Huntoon Knight, A.M., M.D., Professor of Laryngology, Cornell University Medical College, Surgeon Manhattan Eye and Ear Hospital, Throat Department; member of the American Laryngological Association, of the American Medical Association, of the American Academy of Medicine, of the American Therapeutic Society, of the New York Academy of Medicine, etc. 147 illustrations. Philadelphia: P. Blakiston's Son & Company, 1903. Octavo, 423 pages. Price, $3.00.

The text of this volume formed the basis of a course of lectures by the author, and it has been arranged chiefly for the convenience of students as a text-book, which will also be found useful by general practitioners. In a book of this kind, only the essentials can be given, and here they will be found well expressed, for practical service. It is an excellent book for the purpose intended.

"A COMMON COLD."

The history, literature and therapeutics of the condition known as a "Cold" or Coryza, shows conclusively that very little has been known or rightly understood in regard to this state.

The general practitioner cannot be more annoyingly confronted than by a patient applying for something to break up a "cold." The reason for this is that we have not known the true source or origin of the local manifestations, such as the engorged nasal mucous membrane, the free mucus and muco-purulent discharges, the laryngeal, pharyngeal, and bronchial congestions. Many theories have been set forth, such as exposure to irritating atmospheric states, setting up directly an irritation and subsequent inflammation of these respiratory mucous membranes. More recently it has been suggested that sudden checking of the action of the sudoriparous glands and consequent failure of elimination of effete products, by this channel, has thrown extra work, and blood pressure, upon the mucous surfaces and internal organs, the conditions seen in a "cold" resulting. Any such ideas would have answered, if the treatment suggested by the theory had proven satisfactory. Such has not been the case.

Soothing sprays, antiphlogistic treatment, etc., which would be curative, where the cause was simply a direct irritant, these, however, do not sufficiently constitute a successful treatment for colds. Likewise, setting the eliminative organs at work does not entirely arrest the course of a cold.

Who has not witnessed the many failures of a "Good sweating," a dose of "Castor oil," etc.? The fact is, we have been overlooking or failing to recognize the true origin of the diseased state known as a "cold." It is strictly, primarily a disease of the stomach, a derangement of the processes of gastric digestion. Digestive processes are easily unbalanced. Very slight disturbances will frequently, greatly influence them.

The stomach should be properly supplied with blood, the temperature of a digesting mixture should be very equable, the substances to be acted upon must be those capable of the process; effete or poisonous substances in the system disturb functional equilibrium and thus it is that many apparent conditions have at times, and with different observers, taken prominent causative places, but wrongly they did not directly cause the local manifestations of a "cold"; they primarily produce a functional disturbance or a diseased state of the stomach, and the symptoms of a "cold" are reflex manifestations of a gastric derangement. Who has not witnessed all of the symptoms of the onset of a "cold" following a too hasty or indigestible meal? The pampered child, with damaged digestion readily and frequently acquires a "cold"! The consumptive with his catarrh of the stomach has to be careful to avoid a fresh "cold"!

Nasal catarrhs, we generally consider as resulting from a series of neglected colds. Do we not recognize the fact that they will if neglected, eventually ruin the stomach? Do we treat them very successfully? Do not our patients usually become very unhealthy looking? Will they not frequently be

nauseated in the morning? Why is all this the case? It is because we do not primarily treat the stomach. The stomach is a hidden organ, the nose is not; we have seen the nasal manifestations, and we do not recognize the evidences of a stomach disease, until it becomes well marked. The catarrh of the stomach is the primary feature, and this should be treated curatively. WM. M. MEMMINGER, M.D.

Hinsdale, Mont., July 27, 1903.

Vasomotor Ataxia: A Curious and Baffling Idiosyncrasy.—S. S. Cohen invited the attention of the medical profession some years ago to an idiosyncrasy of the circulatory mechanism, which, in its extreme degrees, manifests itself in the form of well-recognized symptom-complexes; in its minor degrees gives rise to puzzling manifestations of great variety of detail; and in its least-developed forms frequently passed unnoticed. A feebleness in the co-ordinating mechanisms, in consequence of which the balance of the cardio-vascular action becomes disturbed by influences that normally have slight effect, appears; the restoration of equilibrium is slow and imperfect. The self-explanatory name of vasamotor ataxia is proposed. These phenomena are displayed, more especially in temperature range—and cold more than heat—emotion, visceral or internal reflex excitation, and the action of toxic agents.

The phenomena exhibited by the heart and by the peripheral vessels (arterioles, cappillaries and venules) are the most noticeable; but similar manifestations probably occur in the vessels of glands and viscera, and by disturbance of cerebral circulation. The stimulus that produces cardiac and vascular disorder may be either central or peripheral, but the defective inhibition upon which phenomena depend must be central, probably a functional or nutritional defect in the great ganglia of the sympathetic system, or in the medullary centers. Functional and nutritional disturbance produce structural, and finally organic change; but the discovery of gross anatomical change at necropsy would not prove that it had existed from the first. Functional, nutritional, or structural defect in the sympathetic ganglia or nerves may be primary, or the result of disease elsewhere. From disturbed innervation and consequent malnutrition, degenerative changes may take place in the vessel walls and in the myocardium.

As Cohen points out, the phenomena of vasomotor ataxia may thus occur independently, or be merely a part of the symptomatology of functional and organic diseases of various kinds. The mechanism is essentially the same. We are all familiar with the pronounced types of vasomotor ataxia; that of vascular relaxation, under the name of Graves's disease or exophthalmic goiter, and that of vascular tetany—or Raynaud's disease or local syncope. Other phenomena of vasomotor paresis or vasomotor spasm, are found with Grave's disease and with Raynaud's disease. Angina pectoris occurs in both, and angioneurotic œdema and spontaneous gangrene have been observed in Grave's disease. As pointing toward more than a superficial or accidental resemblance in such association of the two affections, Cohen submits the following cases:

Case 1. Acro-asphyxia, with intermittent enlargement of thyroid gland, and paroxysmal tachycardia.—Sarah O'N., unmarried; seamstress; aged 25 years; native of Ireland; having fair skin, brown eyes, black hair; was seen at the Philadelphia Polyclinic, April 11, 1892. For three or four months she has had almost constant headache, with occasional dizziness. Vision at times misty. The feet sometimes swell. At times she has pain in the precordium, with cardiac palpitation. These attacks occur paroxysmally. For about two years she has noticed that several times a day, especially if exposed to cold, either by immersion in cold water or otherwise, the fingers suddenly become discolored—purplish. Both extremities are affected at once. The discoloration begins in the palm of the hand and extends downward. It lasts but a few minutes, and disappears quickly. The first phalanx of the middle finger of the right hand is thickened, the skin glossy, the veins much distended. There is a depressed cicatrix on its inner aspect. The patient states that twelve years ago there was a swelling at this place, which was lanced, and kept on discharging until within a few months, when the sinus finally closed. The bowels are constipated. The patient does not rise at night to micturate. Menstruation is irregular. Examination shows all over the arms mottled areas of irregular distribution, indicating by their varying color, and by the appearance of the distended vessels, both capillary and venous congestion. Over the upper part of the chest, anteriorly and in the back, especially beneath the scapulæ, are congeries of distended superficial venules. The legs and feet appear not to be affected. No lesion of the lungs can be detected. At the first examination of the heart the rate is 96. At the base a soft systolic murmur is heard, more distinctly on the left. In the veins of the neck a marked musical hum is heard, louder on the right. It is continuous, with systolic intensification. The thyroid gland is easily demonstrated, but not markedly enlarged. Hæmoglobin is 65 per cent. by Fleischl's scale; red corpuscles number more than 4,000,000; there is no excess of white cells. Urine is 1018, acid, no albumin, no sugar, no casts, no red cells (Dr. Eshner). The fundus of the eye is normal; there is compound hyperopic astigmatism.

Relief of constipation, together with correction of visual error by glasses, apparently relieved the headache. After a few doses of nitroglycerin, the local asphyxia did not return while the drug was taken.

Some three months later the patient returned, complaining of recurrent headache, with attacks of precordial pain and violent palpitation. The nature of these attacks seemed to be that of tachycardia rather than simple palpitation. While under examination the pulse rate was variable, about 130. The thyroid gland was slightly enlarged, and a bruit could be heard over the gland on auscultation.

Picrotoxin, 1-60 grain t. d., was prescribed, with apparent relief to headache. During some ten weeks the thyroid was observed to enlarge and diminish irregularly, without reference to menstruation, which occurred twice during the period. The swelling was soft, not expansile, and greatest on the right side. The patient was last seen some four months ago, when the thyroid gland was apparently normal; pulse rate 96.

Case 2. Epilepsy; acroasphyxia; enlargement of thyroid gland.—Mary N., aged nineteen years; domestic, unmarried, of American birth, Irish parentage, fair skin, brown hair, blue eyes; has had mild epileptic paroxysms of about one-half hour's duration once

a week since the preceding October. There is no aura. She screams and turns pale before losing consciousness. The bowels are regular; the menses regular but painful. The patient is subject to paroxysmal flushing, with subjective and objective heat, especially of the face. There are irregular sweats. She has urticaria in summer time. She is easily excited and has frequent attacks of palpitation and rapid thumping of the heart. The heart is not enlarged; the impulse is jerky; the rate is 100; the first sound is short, the second sound is accentuated at the aortic cartilage and at midsternum. There is a soft systolic murmur over the sternum, near the articulations of the second cartilages; it is not transmitted. The thyroid gland is enlarged, especially in the right lobe; it is soft and pulsating; there is no thrill and no bruit. The hands are of a dusky-blue color, which slowly fades on elevation; the nails are purplish. Upon immersing the hands in ice-cold water they soon become red. If one hand only is placed in the cold water, that one becomes red and the other a deeper blue. Dermographism is marked. Factitious urtacar is produced by pressure, followed by cold. The patient states that only recently has she noticed occasional blueness of the hands; that it is not constant, and is usually produced by cold, but may come on while at work in a warm room. There are on the cheeks of this patient three or four small reddish elevations, surrounded by little radiating lines—a star, as it were—of dilated vessels. A number of small telangiectases are found on the arms and breast. She states that she bleeds easily if cut, but blood is stanched in a reasonable time. She frequently bleeds from the nose. No family history is attainable.

Taken by themselves, two cases might not appear to be of special significance; but to Cohen they were of great interest because they seemed to supply the links between two groups of cases that had occupied his attention for a number of years, and which Cohen believed to be related to each other, as to Grave's disease in the case of the one group, and to Raynaud's disease in the case of the other group; and thus to complete the chain of observation, as of reasoning. This will become more apparent if we copy the report of the case that first drew his thoughts to the subject.

Case 3. In February, 1885, Miss X., of American birth and parentage, Hebrew race, fair complexion, brown hair, gray eyes; an intelligent and truthful, and not hysterical young lady, some 17 or 18 years of age, apparently in perfect health, was alarmed at a sudden dimness of vision, progressing in the course of a few minutes to total blindness, which lasted "about a second." The return of sight was followed by intense headache, lasting about ten minutes. Ophthalmoscopic examination, some hours afterwards, and at different times since, has never detected any abnormality.

Examination of the urine, passed the morning following this attack, showed the presence of a quantity of albumin too slight to be quantitatively estimated, a few leucocytes, a few uric acid crystals, many red blood-cells, and in one or two fields a hyaline tube-cast, or a mucous cast. This condition lasted for two or three days. The urine was acid in reaction, and 1015 to 1018 specific gravity; the quantity was normal. Inquiry revealed the fact that the patient blushed easily, and that in addition, without known emotional cause, there occurred at times what she termed "burning flashes," in which the skin at various areas, sometimes circumscribed, as to a cheek, sometimes generalized, would, for a few minutes, or a few hours, become intensely red, and with both subjective and objective sensation of heat. On one or two occasions the peculiar distribution of the red areas and their persistence for a day, had led to a false domestic diagnosis of measles. But the repetition of the attacks, their peculiar development and course, and the absence of all other morbid phenomena, soon proved the error. As a child, too, she was said to have had measles three times and rubella once. In one of these attacks that I saw, as the rash was fading, the skin of the arms, chest and neck was covered with little pink spots, not elevated above the surface, the largest of which was no larger than an ordinary pinhead, and I was told that the rash began in the same way, but that when at its height it presented either a uniform scarlet flush or the mottled appearance simulating measles. On another occasion I saw the patient when the right cheek was the seat of a vivid blush, the left being apparently normal, and was told that the left cheek has been the blushing one some hours earlier. The flushed right cheek had a surface temperature of 97 degrees F., and the left cheek 95 F., while the axillary temperature was 98.4 degrees F.

Over the middle portion of the left lower jaw this patient's skin invariably presents during menstruation an area of fixed blushing; that is, it is reddened in an oval patch about two inches long and half an inch wide, the color being deepest in the center, and fading at the periphery into that of the surrounding skin. Her nails are slightly convex, pink in color, longitudinally straited, and exhibiting crescentic markings. She has been under observation continuously since the attack of blindness recorded, and during that time has presented, in addition to the flushes spoken of, an attack of erythema nodosum; several attacks of urticaris; one attack that I did not see, which appears from her description to have been a circumscript œdema of the arm, and one that I did see, which was circumscript œdema of the calves of the legs. The transient blindness has been repeated, affecting only one eye, however, and there was one attack of hemiopia, likewise transient, in which she did not determine which eye was affected, or whether both were involved. In 1889 an attack occurred, which (my notes being defective) she describes as follows:

"Having been in good health for two years, I awoke one night with a good desire to urinate; this was followed by a feeling of faintness and great pain in the heart—I must have been partly unconscious, as I walked downstairs without remembering how. When I became aware of my surroundings there was intense itching of the palms of the hands and soles of the feet, and a trembling of the whole body, which, for some minutes, I was unable to control. In the morning there was a red blotchy appearance on the chest, lasting several hours, and welts on the wrists. I felt well, and had no pain. I remember that the urinalysis for the next six months frequently showed albumin, but I felt perfectly well and strong. The rash and welts occasionally appeared."

The urine is for months normal, but occasionally shows a trace of albumin, uric acid crystals, casts cylindroids, or hæmocytes. Sometimes all of these will be found together, sometimes albumin only, or blood cells only. General health and strength keep good, the eyes are emmetropic (Dr. Jackson), with

large pupils, and the blood is normal. Though there are occasional attacks of palpitation, the heart and, so far as I can determine, the lungs and all other viscera—for I do not believe there is organic renal disease—are normal. Menstruation, however, is irregular at times, and there is occasional dysmenorrhœa. The attacks described are not related with menstruation. The thyroid gland is demonstrable, but not enlarged.

The family history in this case is of great interest. It can hardly be a series of meaningless coincidences. The patient's father died of acute pneumonia, after having for forty years suffered with pulmonary hemorrhages, attributed to "disease of one lung," of what nature I do not know.

Several paternal cousins have leucoderma; one has had renal colic passing uric acid gravel; another, highly myopic, has obscure symptoms of disturbance of the sympathetic nervous system, diagnosticated by one observer as incipient Grave's disease; another has had chorea, and is very liable to epistaxis and to panaris; another, likewise highly myopic, has had retinal hemorrhage; another has chilblains every winter, and is subject to sudden syncope from slight indigestion; another has blueness of the hands every winter, with tendency to deep fissuring of the fingertips, unless constantly protected by woolen mittens; another will get circumscript œdema from slight knocks that in others would pass unnoticed and that even in him do not cause discoloration of the skin. A paternal aunt, still living, is affected similarly to the father. A brother of the father's died at the age of thirty, of suffocation, in the course of a pulmonary hemorrhage. His son has progressive myopia of high type. There is likewise a rheumatic tendency in this family; one of its members has had diabetes mellitus. The patient's mother is living and healthy, at past sixty years of age. Severe mental shock, however, not long ago prostrated her in bed for a few days, during which time the heart's action was feeble, excited and irregular; the temperature was slightly subnormal; albumin, tube-casts, red and white blood cells were found in the urine. I am satisfied that she has no organic lesion. Several members of her family have had diabetes mellitus, living, however, to advanced age, and two of her sisters and one niece have had carcinoma of the breast. There is also a gouty and a neurotic heredity in this family.

As further exhibiting the essentially constitutional basis of vasomotor ataxia, the following case may be briefly stated:

Case 4. A brother of the preceding patient, aged 35 years, dark-haired, blue-eyed, has been for some eight years the subject of ophthalmic migraine, and has attacks of spasmodic asthma if exposed to the emanations of feathers, or to moist atmosphere at the seashore. He has hypermetropic astigmatism. His thyroid gland is slightly enlarged. He exhibits along the borders of the ribs the peculiar appearance which I have termed the costal fringe, namely, a network of telangiectases, following the outlines of the costal arches. This appearance is found in some cases of hepatic cirrhosis, but this patient's liver is apparently normal. He has no pulmonary or other visceral lesion, but seized at times with gastric crises (pain relieved by vomiting), that appear to correspond with periods of lithuria and oxaluria. His urine has never shown albumin or casts; and red blood-cells have been found on but one occasion. His reflexes are normal, or perhaps slightly exaggerated.

These two patients, and a sister of theirs who is subject to profuse epistaxis, occurring without apparent cause, but is otherwise healthy, exhibit three symptoms upon which Cohen lays special stress:

1. Dermographism.—That is to say if, with a blunt probe, and using very light pressure, letters or other device be traced upon the skin of the patient, especially upon the inner aspect of the limbs, or over the sternum, the tracings soon appear in a rosy-red tint that lasts for some minutes, or even half an hour.

2. Factitious Urticaria.—If in tracing upon the skin one uses a little deeper pressure than before, the red lines soon broaden, and finally the reddened portions show a more or less decided elevation, like the wheals of urticaria. In some cases the red color fades, in others it presists. The elevation remains in some instances, notably in cases of chorea and of exophthalmic goiter, for several hours. When factitious urticaria is not immediately apparent upon the use of pressure merely, it may in some cases be quickly developed by applying cold to the part, as with a lump of ice; in other cases the application of hot water will cause it to appear. When cold or heat is applied, the wheals are always reddened, and sometimes a diffuse redness that slowly fades is likewise seen upon the intervening skin.

3. A modified form of Stellwag's eye-sign of exophthalmic goiter.—When the patient looks fixedly before him, and opens the eyes, a distinct white rim of sclera is exposed above the cornea. It may be spontaneously exhibited in the excitement of conversation, or may have to be developed by the physician in the course of examination.

UNIVERSITY OF THE STATE OF NEW YORK.

Medical Examination, Physiology and Hygiene.

1. Where in the body may the following epithelial cells be found: squamous, ciliated, polyhedral columnar, transitional?

2. Describe the development and functions of teeth.

3. Describe the systemic blood circulation. State in detail the changes that take place in the character of the systemic blood.

4. Mention the forces at work in the absorption of digested food.

5. State the functions of the medulla oblongata.

6. Describe the normal heart sounds and state where they are best heard.

7. Give the perversion of function and that may cause *a*) vomiting, *b*) hiccup.

8. Describe the function of the kidney.

9. What would be the effect of an exclusive diet of *a*) nitrogenous food, **b**) fats and carbohydrates? Explain.

10. In what parts of the body is the sense of touch most delicate? Describe the nervous mechanism on which the sense of touch depends.

11. Give the rationale of the use of the various antitoxins.

12. Mention some pathogenic bacilli found in drinking water and state what means should be employed to destroy their infectiousness. How may such impure water contaminate a milk supply?

13. Mention some of the diseases incidental to school life.

14. Mention *five* occupations prejudicial to health. Explain.

15. Give the nervous and muscular mechanism of respiration. Where is the respiratory center located?

MISCELLANY.

—A test for tobacco amblyopia is said to be inability to distinguish at a glance between gold and silver coins.

—An ointment made of yellow oxide of mercury, two grains to one ounce of vaseline, applied lightly once a day, cures granulated lids.

—It is claimed (*Medical Summary*) that one drop of chloroform on sugar, three times a day, for a month, will insure exemption from attacks of gall-stone and jaundice.

—In prescribing any form of alcohol as an aid to digestion, make certain not to exceed five per cent. of the total amount of food ingested at the meal. It is now considered that an amount greater than this will retard digestion in direct ratio to the excess used.

—Dr. John P. Wilson, of Poughkeepsie, N. Y., feeling a soreness in his throat, examined it with the aid of a mirror, and saw a bullet lodged in the side, which he extracted with forceps. The bullet had entered the Doctor's head near the nose five years before by the accidental discharging of a gun.

—It is reported that Sir Frederick Treves is about to retire from the practice of medicine. In the report to which we have access no reason is given for this retirement beyond his inclination to devote himself to other matters than medicine during the remainder of his life.

—It is never wise, says the *International Journal of Surgery*, to anesthetize a patient in the presence of many people. It renders him more agitated and nervous. It is preferable to anesthetize in an adjoining room, or to cause all but the anesthetist and one assistant to leave the room until the patient is thoroughly under the influence of the anesthetic.

—Senator Piot has written to Premier Combes proposing that the Government accord decorations to mothers of families. The Senator says that the depopulation of France is a serious menace, and urges that mothers of large families are entitled to equal consideration with firemen, gymnasts, and others who have recently been decorated. M. Piot expects to propose in parliament the creation of a mother's decoration consisting of a ribbon and cross.

—It is said that the diphtheria antitoxin discovered by Professor Roux, of the Pasteur Institute, is now being made up in the form of lozenges for use during convalescence. The professor has observed that baccili found in the mouths of patients several weeks after recovery were liable to convey the disease to others. The lozenges overcome this, and also render protective inoculation unnecessary, it is said.

—At a meeting of the International Executive Committee of the Pan-American Medical Congress, held April 1, 1903, it was decided to accept the proposal of the Argentine Republic to hold the fourth Pan-American Congress in Buenos Ayres in 1905, instead of 1903, as had been announced in their invitation of February, 1901.

—American physicians and dentists will now be on the same standing in Turkey as are those of France. They have heretofore been refused examination and could not practice. They will now be allowed to practice if they present good diplomas and pass the examination. This is the result of pressure brought to bear on the Sultan by President Roosevelt and United States Minister Leishman.

—The only Chinese hospital with Chinese doctors, Chinese medicine, Chinese nurses, and Chinese patients, is situated on the border of Chinatown, San Francisco. It is, according to the *Philadelphia Medical Journal*, a large new two-story building, but recently erected. Up to this time a Chinese, unless afflicted with leprosy, in which case he was sent to the pesthouse, was not admitted to the public hospitals. Rich Chinese merchants subscribed $30,000, the income of which supports the present Chinese hospital. There is a daily clinic held in the hospital, with a resident white physician and surgeon. There is also a Chinese department with a Chinese doctor. As many as 400 cases are treated in a month, with only fifteen deaths. The hospital contains forty beds.

—Dr. C. A. Penrose will be in charge of the medical staff and will act as surgeon to the Baltimore expedition, which is to explore the Bahamas. His department will investigate the general sanitary condition of the islands. There will also fall to Dr. Penrose an opportunity to study an extremely interesting colony of degenerates on one of the islands. These are descended from a band of American tories who left this country at the close of the Revolution in order to live under the British flag. The band settled in the Bahamas and soon found themselves surrounded on all sides by blacks. Accordingly, they have married among themselves to this day. Their interbreeding has caused a degeneracy of their stock until they are a colony of idiots and deformations. The peculiar interest of the prospective study is this, that since the British government has always required the filing of records, Dr. Penrose will probably be able to trace the line of degeneracy through successive generations. There is also an interesting leper colony on the islands and these will be studied also.

—Dr. S. Weir Mitchell has written a detective story, described as having a distinct psychological and medical interest. It is about to be issued by the Century Company under the title of "A Comedy of Conscience." Dr. Mitchell is probably the oldest active writer of stories for the English-speaking public.

—The prize offered by the Craig colony, Sonyea, N. Y., for the best original work on the pathology and treatment of epilepsy, has been awarded to the private docent of neurology at Budapest, Dr. Julius Donath. The title of his work is "The Importance of Cholin in Epilepsy." Last year an Italian, Dr. C. Ceni, received the prize for his research on the serum treatment of epilepsy.

—Richard Mead, the celebrated English physician, was so infuriated by the bitter attack of Professor Woodward on him in "The State of Physic and Diseases," and by Woodward's personal demeanor to him in public, that he challenged him to a duel. Woodward was disarmed, and when ordered by Mead to beg for his life, replied, with consistent irony: "Never, till I am your patient!"

—A novel contrivance has been introduced in the Paris hospitals. It is a little apparatus which is put under the arms of a fever patient, and so constructed that on the temperature reaching a dangerous height it rings a bell, summoning doctor and nurse.

CHRONIC PERITONITIS IN CHILDREN.

By Geo. R. Wilson, M. D.

ACCORDING to Henoch, as far back as 1838, Wolff studied chronic peritonitis in children and stated that it was an exceedingly common disease, as he found over 100 cases in six years. Acand stated that it was an exceedingly common disease, as he found over one hundred cases in six years. According to Wolff the chief symptoms noticed was a copious abdominal effusion. It is probable, however, from more accurate recent observations, that many of these cases were not diagnosed properly, which is proved by the fact that most of them were reported as cured. After these observations of Wolff, however, this subject seems to have been lost entirely until 1869, when Zalragin wrote on this subject. At this time the increasing activity in abdominal surgery led to the report of many cases while the belief grew that the condition was always due to tubercular causes. Then in 1884 West in his book on diseases of children claimed that chronic peritonitis was almost always tubercular. Vierordt, Bazinsky and Pickarski have modified this belief until now it is generally accepted that the peritoneum as well as the pleura may be the seat of a simple chronic inflammation, with serious exudation. This simple form which excludes all intraperitoneal suppuration, is characterized by a slow ebolution, absence of spontaneous pain or often demurs to pressure. The only symptom is a free or encysted ascites.

In simple peritonitis, the etiology is often most obscure; scarcely ever is a history of accident of injury found. In some cases a preceding history of exanthematous disease has been reported which may have etiological bearing, such as occurring after measles. The complete cure of these cases after several tappings diagnosed the cases undoubtedly. The point of greatest value in the diagnosis is the general condition of the patient. In the simple uncomplicated form, the general nutrition and well-being of the child suffers but little, while, on the contrary, in the tubercular form the emaciation is striking. Search for the bacilli in the effusion is often disappointing, and consequently a negative finding does not exclude the possibility of tubercular disease. The fact that most of the patients are females suggests a possible connection in many cases between the peritoneal inflammation and a vulvo-vaginitis which is not uncommon even in young girls.

Cirrhosis of the liver must be considered in the diagnosis in both its atrophic and hypertrophic forms; autopsies in cases of tubercular peritonitis often show an accompanying interstitial hepatitis which can be explained by a direct extension of the inflammation along Glisson's capsule to the parenchyma of the liver.

Again, hepatic disease itself may cause peritonitis. In the way of treatment, internal medication has no effect apparently on the tubercular form. Simple puncture is more successful and may occasionally effect a cure; cures have been known to occur spontaneously. Konig has reported 130 successful cases (seven in children), and Alexandroff twenty cases, which were all thought to be tubercular. This may be doubted, for the reason that none of them have been followed long enough and because many false diagnoses have been made, many cases of simple peritonitis being mistaken for tubercular.

Henoch reports a case which was called tubercular, and operated on. The peritoneum was studded with small nodosities, but the microscope proved they were purely of fibrous structure; no giant cells, tubercles or bacilli were found. This case was considered wrongly of tubercular origin.

The great question of the possibility of abdominal tuberculosis in children being due directly to the ingestion of milk from tuberculous cows was raised afresh by Koch two years ago, in London, astounding the profession by his assertions that this infection was unlikely, if not impossible; much discussion has followed, and his recent theory has been rejected on the whole. Johnston, in the "Philadelphia Medical Journal" for Jan. 12, 1901, writes clearly as follows:

"Purban states that in 165 cases of peritoneal tuberculosis examined after death, 53 per cent. were attributed to intestinal infection. As a considerable proportion of children suffering from tubercular peritonitis or disease of the mesenteric glands recover, these figures do not adequately represent the proportion of children so affected.

"This great increase of tuberculosis of the intestines and adjacent glands in children at a period of life when the powers of resistance of the organism are at their lowest is very suggestive of the existence of an infective agency in children which is not found in adults, and as the only vehicle by which primary tubercular infection can be conveyed to the digestive tract of infants is found in their food-supply, we are forced to the conclusion that milk, which forms such an essential part of the food of infants, is to them a frequent source of infection. Moreover, the last few years have demonstrated that tuberculosis is common in dairy cows, and more particularly in Jerseys. Of 4,093 cattle in Massachusetts tested for tuberculosis, 1,081, or 25 per cent., reacted positively to tuberculin. These were killed and anatomical evidences of tuberculosis were found in all but two. Amongst dairy cattle, at the present time, it has been estimated that at least 25 per cent. are more or less affected with tuberculosis. This estimate is based upon the results of postmortem examinations of herds of cattle which have been slaughtered under the pleuropneumonia regulations in England and of observations made in public slaughter-houses. Where the tuberculin test is used the percentage of animals affected is considerably higher. Tubercle-bacilli are generally found in milk when tuberculosis of the udder is present, and such milk is said to possess a virulence which can only be termed as extraordinary. The experiments of the Royal Commission of 1890 in England are exceedingly interesting in this connection. When guineapigs are fed on meat which was intentionally contaminated with tubercle-bacilli, only a few developed the disease, but when they were fed milk from tuberculous udders all became infected.

"The milk of an animal suffering from tuberculosis may also contain tubercle-bacilli and be capable of communicating the disease when no demonstrable disease of the udder is present, and bacilli are no doubt present in a fair percentage of milks on the market. Obermuller found that 10 per cent. of guineapigs inoculated with ordinary market milk became tuberculous, and 30 per cent. of those inoculated with ordinary market cream. In many instances the udder shows no perceptible disease; in fact, tubercular disease in such a bulky organ may be impossible of recognition on physical examination, and in its early stages is most difficult to diagnose. Nor does an examination of milk for bacilli present an infallible

solution of the problem, for they may be present at one time and absent at another. Sidney Martin examined the milk of five cows which turned out to have tuberculosis of the udder, and could find tubercle-bacilli in but three. Fifteen test animals were fed with the milk that contained bacilli, and tuberculosis was produced in each one; the milk of the two cows which had tubercular udders, but in whose milk no tubercle-bacilli could be demonstrated, was fed to 12 test animals, and four of them developed tuberculosis.

"Tubercular bacilli have also been found in butter and cheese. That gastric juice exerts any influence upon them under natural conditions is extremely doubtful, as these organisms can resist it from five to six hours outside the body. Under natural circumstances the bacilli would have a still better chance of escaping unharmed, the gastric juice being diluted and the bacilli being often coated with food and more or less protected in this way.

"It is also possible to contract other forms of tuberculosis than the intestinal from infected milk. Welch states that postmortems show that 40 to 80 per cent. of all cases of pulmonary tuberculosis have also intestinal disease. Nor is it possible in all cases to tell which is the primary and which is the secondary lesion. He also says that tubercle bacilli may enter the body without leaving behind any lesion at the point of entrance. Hence, is it not impossible to deny that a much larger proportion of cases of the pulmonary forms of the disease may be due to infection from the gastrointestinal tract than is commonly supposed?

"In view of these facts, does it not seem that the State which does so much to prevent the spread of other infectious and communicable diseases should do more to limit the spread of this fatal disease by preventing the sale of milk from tuberculous cows?

"The exclusion from dairies of every cow which has demonstrable disease of the udder only would form some approach to security; but as tubercle bacilli have so frequently been found in the milk of cows which are free from udder disease, and as such disease is so difficult of recognition in its incipiency, I believe that all cows responding to the tuberculin test are possible sources of danger, and that the sale of their milk should be prohibited. The State should pass laws compelling the systematic inspection of all dairies and cowsheds within its borders, and of all animals whose milk is placed on sale. Regular tests with tuberculin should be made, and the sale of any milk from a dairy wherein a tuberculous animal is found should be prevented by a prohibitive penalty until such animal is excluded from the herd."

In chronic nontubercular peritonitis, the chronic form persists right from the outset in the majority of cases; nearly all cases have been reported in children over six years of age. The causes are obscure, as I have said, and the postmortem observations, as I have found on extensive search through medical literature, are scanty. In such cases as have been reported there has been found a large amount of serum, greenish in color, in the general peritoneal cavity, with some fibrin and adhesions. Pleurisy, chronic in nature, may also be found. Frequently no symptoms are noticed, excepting possibly a slight decline in general health or indigestion. Swelling is noticed in the abdomen, pain is slight or lacking, and rarely is there marked abdominal tendencies. The bowels are uncertain, the umbilicus protrudes, and the superficial veins stand out.

Occasionally there is rise in temperature, with general weakness, loss of appetite, and bloodlessness. The liquid is slowly absorbed and the condition disappears. In these cases the patient should be kept in bed, or at least at rest, with the use of a supporting tonic treatment. Saline diuretics may be given, and the amount of fluid ingesta cut down. Aspiration is only to be used when absorption does not take place and the patient's health begins to suffer. In some cases it has been necessary to do laparotomy.

When it comes to the closer inspection of tubercular peritonitis in children, it is found that the peritoneum is frequently the seat of tubercular inflammation in quite early life. Still it is not so common in infants as in older children; Holt reports that in fifty-six collected cases, seven were under three years of age, twenty-six from three to eight, and twenty-three from eight to sixteen. He also records that in 119 autopsies upon tubercular patients, the majority under three years of age, the peritoneum was involved in nine per cent. Ashby reports that in 105 autopsies on older tubercular children, the peritoneum was involved in thirty-six per cent. Biedert has reported an enormous number of autopsies on tubercular children, 883 in all, in which he found the peritoneum involved in eighteen per cent. This shows that the condition is two or three times more prevalent abroad than in America.

In the great majority of cases, tubercular peritonitis is secondary in its nature, infected directly from the intestine, the mesenteric glands or the pleura, or indirectly from the lungs, the bronchial glands, and the cervical glands. Occasionally it is primary in its character, due apparently to a fall or blow on the abdomen.

The most common form seen in infants is miliary tuberculosis accompanying general tuberculosis; these lesions are generally scattered sparsely over the peritoneum, and the signs of inflammation are slight or absent entirely. As a rule, these cases do not come under professional care as cases of peritonitis, as the symptoms are lacking. When ascites occurs, however, the peritoneum is studded with miliary tubercles, both discrete and in conglomerate masses. The peritoneum shows the various changes of acute or sub-acute inflammation, there being congestions, with the product of considerable fibrin and a large amount of serum. At first this fluid is in the general peritoneal cavity, later it may become sacculated; it is generally olive-colored, but it may become purulent and bloody. These cases usually last one or two months, with variable symptoms; there is really no distinctive symptom except distention of the abdomen. Generally there is some fever, 100 to 102 degrees, with weakness, prostration and gradual loss of flesh. The tendency of this form of peritonitis is to a fatal termination unless treated; occasionally the fluid is absorbed, and the case develops into one of the fibrous type, with a marked tendency to relapse. The fibrous form of tubercular peritonitis may be regarded as an attempt upon nature's part to effect a cure. The diagnostic feature of the lesion is the production of extensive bands of adhesion, not only between the intestinal coils, but also between the intestines and abdominal walls, so that the intestines may be bound back against the spine as if by heavy cords. The

presence of ascites is not always essential; cases have been reported when this symptom was absent entirely.

Chronicity is the chief characteristic of this condition, for these cases are marked by their slow, irregular course. At the outset, the disease appears in a very insidious manner. For a long time the general health may remain good or fair, while the fever may be slight, or entirely absent, the bowels may be constipated or loose, and vomiting is rarely seen. The first diagnostic symptom is generally enlargement of the abdomen; at first this may be due to tympanitis, but later ascites develop. Owing to the adhesions of the intestines, there may appear irregularities in the form of the swelling of the abdomen. If the pressure from these adhesions extends to the vena cava, the stomach, the renal, or portal veins, or the thoracic duct, dyspepsia, albuminuria, odema of the legs, and emaciation follow. Generally this condition lasts from three months to a year, or it may last over a period of several years.

An unfortunate form of this disease is that commonly termed the ulcerative. In these cases there is, first, a very abundant fibrinous exudate, which mat together the coils of intestines, causing them to adhere to the solid viscera and abdominal walls; in this exudate are found tubercular deposits, which break down into ulcerative lesions. Naturally these cases are not so vague in their clinical symptoms as are those in the fibrous form. There are well-marked constitutional symptoms; fever is present, of marked degree, with progressive emaciation, anemia, sweating and prostration. Diarrhoea is common, and the intestinal discharges are frequently bloody; the abdomen is distended, but often not as much as in other forms. The course of the disease is steady, resulting often fatally in two or three months; for cases of this type are generally hopeless. In the ascitic and fibrous forms, the prognosis is fairly good, especially since the introduction of laparotomy as a means of treatment; for while the general treatment of tuberculous peritonitis is the same as that of tuberculosis elsewhere, the only local treatment which can be considered curative is surgical. No longer is aspiration of any service except as a means of diagnosis. Undoubtedly in modern surgery, the results are so satisfactory from laparotomy that it should be considered in every case. Probably, though, the best cases for operative treatment are those of ascites.

The classic work of Aldibert, published in Paris in 1892, gives the indications for the operator concisely as follows: "Laparotomy is intended in all forms accompanied by ascites, although in acute cases it may be only palliative; in suppurative forms which are diffuse or with a unilocular cyst; in all cases of intestinal obstruction in the course of tubercular peritonitis, and in all cases of doubtful diagnosis.

"The operation is contraindicated in the fibrous form not attended by pain, thus usually tending to spontaneous cure; in the dry ulcerative form, except at the outset; in the suppurative form with multilocular cysts. The existence of other foci of tuberculosis does not contra-indicate operation except when there are chiefly intestinal, or when there is general tuberculosis, with extensive and rapidly progressing lesions."

Aldibert has reported the results of fifty-two operations, which show forty-five recoveries, a notable result. Why the operation of opening and draining the abdomen should arrest this disease is not yet clear; still, as the results are such, the physician must accept them.

As a working rule, it is well to bear in mind that usually chronic ascites with slight fever in children is due to tubercular peritonitis; should the effusion be saculated, the possibilities of its being peritonitis is increased. Add to this clinical picture the signs and symptoms of tubercular disease of the lungs, and the diagnosis is quite absolute. It is true that hepatic cirrhosis is more chronic in its course, but it is rare before the tenth year, being practically unknown in infancy. With cirrhosis there is often a history of syphils and jaundice.

Should ascites be absent, we may still suspect tubercular peritonitis if we should find irregular nodules through the abdomen, associated with fever, emaciation, and some tendencies. A very suspicious sign is the presence of chronic abscess in the umbilical region. It is easier to recognize the ulcerative form, because generally with it is associated evidences of advanced tubercular disease elsewhere, as in the lungs. In doubtful cases it is now regarded as justifiable to make an exploratory incision for diagnostic purposes. It is at times impossible to diagnose between non-tubercular and tubercular chronic peritonitis, because there may be a good family history; there may be no sign of tubercular disease elsewhere; abdominal pain may be existing or very slight; nodular tumors may be absent, and fever and emaciation lacking. In such a case, with an excessive secretion of fluid, it is well to consider the case one of simple inflammation. The examination of the fibrous nodules under the microscope or the use of inoculation may be required to make the diagnosis.

Remember, as a golden rule, however, that the chances are that the case is one of tubercular inflammation, because it is much more common than the simpler form. As long ago as 1888 Kummel noted that, whereas not very long before that time, tuberculous peritonitis was only noticed by accident, as, for example, when abdominal section was performed on account of supposed ovarian disease or other abnormal abdominal conditions, yet now it is correctly diagnosticated and recognized as a local disease, as in tuberculosis of bones and joints. It is also, like them, treated by operative measures. He analyzed forty cases in which this condition was found, the patients ranging in age from four to fifty-six years, but the majority between fifteen and twenty. Most of the operations were based on false diagnoses. All but two were women. In the two males the condition was noticed incidentally while operating for ileus. Only in a few instances was the tuberculosis diagnosticated and the operation undertaken for its relief. As a rule, these cases all appeared to be cystic and consisted of collections of liquid between lymph bands, more or less organized. In a smaller proportion the tuberculosis was general. In no cases did the operation cause a hastening of the process, but, on the contrary, it always seemed to have a distinct ameliorating and retarding influence. He concluded that laparotomy may be regarded as a curative as well as a palliative measure in the treatment of abdominal tuberculosis, making him one of the pioneers in this field.

—Mr. Charles Stevens, secretary of the Anti-Vaccination League of Milwaukee, died recently of smallpox. His infection was from its onset intensely virulent.

A STUDY OF HYPNOTICS.

By A. M. Leonard, M. D.

IT would seem as if we were already provided with a satisfactory list of hypnotics, but if we consider the subject practically we will find that many do not fill all indications, or, again, many are satisfactory in some cases, but most unsatisfactory in others. Some act very slowly, while others, more prompt in action, have disadvantages which contra-indicate their use.

Hence we see that for each special case the choice of hypnotics is not as large as it would seem at first thought.

chloralanhydride, being a crystalline drug with a has been brought forth in the past ten years, with more or less flourish of trumpets which seems nowadays necessary to introduce new drugs. Strumpell has been almost the first clinician to use and report on this newer drug. He stated as the result of his experience that chloralamid had some qualities not possessed by other members of its class.

Chloralamid is a product from formamid and chloralanbydride, being a crystalline drug with a somewhat bitter taste. In alkaline solutions it decomposes, and hence it should be in a slightly acid medium. It is readily soluble in alcoholic solutions, hence it can be given in wine. The dose varies according to the case, and can be given in as large quantities as thirty to forty-five grains.

According to Strumpell, it is best adapted to cases where there is not much pain; it has proved of service in cardiac affections, in diseases of the cord, in neurasthenia and in phthisis. Comparing it with chloral, it is said to be the stronger hypnotic; its taste is better and the following depressing symptoms are less. Strumpell reports one case where collapse was observed, but he was not sure that it was due to the use of the drug. Slight pain and fullness of the head on waking seem to be the worst after-effects. He thinks thirty-five grains is sufficient, but more can be given in severe cases. No unpleasant action on respiration, temperature, circulation, digestion, or on the secretion of urine was noted. Wood and Cerna found that its action on the circulation was very feeble; only the largest toxic doses lowering the arterial pressure at all. Its effect upon the spinal cord was very feeble, and none were noticed upon the nerves and muscles. It was upon the certical cortex that its effect was most pronounced.

In doses of fifteen grains Reichmann found the drug very uncertain, getting very varying results. With thirty grains the action was much more certain, and still more satisfactory when forty-five grains was used.

When the drug is given in the day time and sleep did not follow, the patient generally complained of headache. Again, he noticed in severe cases that the patients seemed tired and sleepy after waking in the morning. Reichmann believes this to be a very serviceable hypnotic. Peiper prefers this drug to chloral, especially in insomnia, asthma, subacute rheumatism, diseases of the stomach and of the cord. Chloral should be avoided in cases where there is a tendency to bronchitis and pneumonia, for it favors congestion of the lungs; here chloralamid is perferable. To relieve pain, both drugs are not so valuable, as they must be given in doses so large as to be dangerous. Their powers in this direction are incomparably less where there is cardiac weakness, and if a fatty or feeble heart is detected, it should be avoided. Chloralamid is more valuable here.

Sulphonal is considered by Garnier as the most certain in its action of all the recent hypnotics, especially in mental diseases. In almost all of his cases he relieved insomnia by doses of from thirty to seventy-five grains. It is tasteless and seems more reliable than paraldehyde, urethan or chloral. In one hundred cases, vomiting was produced in five per cent. and a slight diarrhœa in seventeen per cent. These symptoms contra-indicate the use of the drug, especially if they are accompanied by such congestive symptoms as dizziness and a staggering gait.

Garnier found that sulphonal, given only every other day, made the patients comparatively quiet during the interval. It should be the invariable rule that when the drug is given continuously every two weeks, it should be suspended for several days to allow the system to clear itself. The urine should also be carefully watched, and on the first appearance of the red tint it should be withdrawn.

Sleep generally comes on slowly following the administration of sulphonal, although there have been cases reported where its onset has been abrupt. If the sleeplessness is due to pain, sulphonal generally is not serviceable, for it has little or no analgesic effect. Cases of poisoning have been reported from the continued use of this drug, especially is it irritating to already congested kidneys. Different authorities, such as Tyson, have reported cases of hæmatoporphyrinuria following its continued use, and the explanation is difficult. It is generally thought that hæmatoporphyrin is a decomposition product of hæmatin, and the condition is due to the absorption of altered blood from hemorrhages which have been produced in the mucous membrane of the stomach and intestines caused by the sulphonal. But this theory has been denied by Kast, Weiss, Garrod and Hopkins. The free use of warm water to wash the poison out of the system is the best treatment in sulphonal poisoning. Muller states that bicarbonate of sodium is a specific, and hence feebly alkalinized water should be given by the mouth and by rectal injections.

As sulphonal is absorbed with difficulty, it should always be given in fine powder diffused in water or milk or in capsules. Compressed pills of sulphonal will pass through the alimentary canal unchanged; no doubt much of this drug's reputation for slowness or uncertainty is due to improper methods of administration. Wood states the maximum dose as forty-five grains, but other authorities have reported as high as seventy-five grains as having been given.

One of the most systematic clinical studies of sulphonal was made by Johnstone in a selected series of fifty cases of mental disorder. He arranges his results in three classes: First, the effects produced by single doses or doses separated at long intervals. Second, those produced by doses repeated at intervals of forty-eight hours, and, third, those produced by doses repeated at intervals of twenty-four hours or oftener. It was his custom to begin with single doses given in the evening, repeating them when necessary at periods of forty-eight hours. When he found this dosage insufficient to produce sleep and quiet, he decreased the interval to twenty-four hours. A satisfactory hypnotic effect was in this way obtained. In cases where the excitement was intractable, it was not infrequently found necessary to give the drug twice a day—in the

than opium. Chloral is a drug that is dangerous morning and evening. He found that greater frequency than this was useless for good. In properly regulated doses Johnstone found that sulphonal was an efficient hypnotic and its action fairly constant.

The sleep produced by it was natural and tranquil and unaffected by dreams. He noted no ill effects on general health or on circulation, appetite, digestion, temperature or respiration. Often in time the dose could be reduced and finally abandoned, and the patient continued to sleep nicely. In mental distress or excitement, the drug had an active sedative action, and was especially efficient in cases of recent insanity of acute character.

The bad effects, as seen by Johnstone, were its slow action and its tendency to be prolonged into the next day, producing drowsiness, confusion, giddiness or lassitude.

Cramer, who has studied the process of digestion as influenced by hypnotics, reports that he tested chloral, paraldehyde, hydrate of amylene and sulphonal. He studied their action on the saliva, gastric juice and pancreatic secretion; for this purpose he used the method of artificial digestion. He found that these drugs did not interfere with the diastatic action of mixed saliva, while the capacity to digest fibrin is not reduced by weak solutions of chloral, paraldehyde, amylene hydrate, and sulphonal. However, in the proportion of one to twenty, they all retarded this action except sulphonal. The functions of the panceatic juice were markedly affected by paraldehyde and chloral, less so by hydrate of amylene and not at all by sulphonal. Hence Cramer comes to the conclusion that these drugs should not be indiscriminately dispensed, especially in cases where the digestion is already impaired.

In the Konigsmutter Institution, Forster has used sulphonal to a large extent, and is pleased with the results. In mental diseases he used the drug principally as a motor depressant. Noisy, obstreperous patients were quieted down. Many who were given to soiling themselves ceased to do so; this condition of restfulness was induced in excitement stages of acute and chronic insanity, periodical and chronic mania, senile demential, progressive paralysis, idiocy and epilepsy. Generally thirty grains were sufficient, but he gave as high as sixty if needed. Single doses were given from seven and a half to fifteen grains. In periodical excitement he found, if given regularly, it shortened and ameliorated the period of excitement, and it was of especial value in acute melancholia and insanity, while it relieved epileptic attacks.

Forster found two disagreeable after-effects which he called sulphonalismus. The first was a motor and sensory depressive form that appeared as paretic weakness at first in the lower extremities, then in the tongue and upper extremities. The other form was a persistent somnolency and a diminution of sensation, with weakening or extinction of the cutaneous sensibility. The first stage was not dangerous, but the second required careful consideration. On reduction of the dose of sulphonal, these symptoms disappeared. The pulse was generally powerful and regular. Neither respiration nor the genito-urinary system was affected injuriously. Disturbances of the digestive tract were noted occasionally with an exanthem. Tolerance of the drug was never observed, so that it can be discontinued at any time.

Two drugs that were lauded to the skies within ten years seem to have dropped largely out of sight; one is methylal and the other amylene hydrate. Krafft Ebing, the eminent alienist, reported very favorable results with methylal in numerous cases. In general terms he concludes that this agent is more useful in asthenic conditions, and is not so effective when cerebral hyperæmia exists. The sleep produced by it is simlar to natural sleep, and no important or unpleasant after effects were noted. He believed it to be the best remedy for delirium tremens in his possession. He gave it in distilled water in doses of one half grain to two grains subcutaneously. Wood criticises it severely by stating that most patients become rapidly accustomed to it, so that its sleep-producing power is greatly impared.

Amylene hydrate has been used largely by Gurther, who found that it acted pointedly and efficiently in cases of alcoholism, epilepsy, morphinism, spasmodic cough and cystitis. It seems to be a safe, useful hypnotic, superior to paraldehyde, but it is used very little in America.

Trional has developed slowly into a popular hypnotic, usually producing in fifteen minutes to an hour a quiet sleep, resembling normal sleep very closely. Given in dose of ten to fifteen grains, it is less harmful than most hypnotics, acts more quickly and more certain in its action than sulphonal, while its after effects are less. It can be combined with opium if sleeplessness exists due to pain.

For some reason paraldehyde has been used largely in insane hospitals as a hypnotic, although it is somewhat uncertain in its action, has but little influence over pain, has an exceeding nauseous taste and a disagreeable odor which is imparted to the breath, and tends to upset the stomach. Yet it is largely used. The writer well remembers his experience as a hospital resident when it was his duty to give this nauseous drug to many objecting patients. He often wondered why the drug was such a favorite with hospital chiefs.

Blanc has recommended highly the use of chloral in puerperal eclampsia. The condition of the patient often precludes the administration of chloral by ordinary means. If the woman is in a state of coma, she cannot be made to swallow; if the drug is injected in solution into the rectum, it may not be retained long enough to permit absorption to take place. For subcutaneous administration, the drug is too irritating and the dose too large. Other methods have been suggested, such as to pour the solution through a tube into the nasal passage into the pharynx, but this excites coughing and the solution is generally rejected. To overcome all these objections Blanc introduces the chloral by means of a moderate-sized stomach tube passed through the mouth or nose into the stomach, and recommends this method above all others.

The troublesome subject of the treatment of sleeplessness constantly comes up to the busy practitioner. There are various ways to treat patients who dream unrefreshingly or have scanty, unrefreshing sleep. To overcome the partial functional activity of the brain there are many plans. In the first place, drugs and treatment are not going to take the place of content and lack of worry. How often have I seen a man, sleepless, irritable and anemic, bloom like the rose when good news came to him or bettered financial conditions. In justice to ourselves as well as our patients, when we suspect this to be the cause, we

should be frank with our patients and try to remove this prolific cause of insomnia. Open air, playing of golf, walking are excellent, even when we cannot remove the cause of the worry.

Medicinally often a hot bath taken immediately before the individual wishes to settle down for the night is often efficacious. Attention to details is necessary for success, however. A temperature of 65 degrees F. should be had for the room, and the patient should be stripped and his head douched with water at 100 degrees F. Then the entire body except the head should be immersed in a bath of 105 to 110 degrees F. for ten minutes or thereabouts. He should then be wrapped in blankets, taken to his bedroom, put to bed with a hot bottle to the feet, and the head well elevated. Here the whole brain is freed from blood and dreaming lessened. Brunton suggests that strychnia in these cases will act as a hypnotic.

General massage may be excellent where there is organic or functional heart disease, being careful not to chill the body. On the other hand, I have seen cases made much worse by the use of baths or massage at night, increasing restlessness and insomnia. These cases, I will acknowledge, generally occur where the work is done by the family or other amateurs.

Where hyperesthesia exists or an overwrought nervous system is found, massage certainly is useless, if vigorously done. Here gentle kneading of the abdomen or stroking of the back and limbs may be tried. A hot abdominal compress is good in these cases, consisting of two bandages, four yards long and one and a half yards wide, heated dry in a hot oven and brought in a covered jar to the bed. Dip the end of one in hot water just enough to cover abdomen and wind the bandages around this.

Where massage or baths tend to increase the nervous excitement, the wet pack is excellent, especially where drugs are useless. The patient should be placed in the pack for twenty minutes to half an hour, and then quickly dressed in warm night clothes and placed quietly and quickly in a warm bed. If the action of the pack seems transitory, its coverings should be more gradually removed, and the patient not permitted to become too warm.

After all, these measures do not remove the cause. It must be looked for carefully; it may be freedom from business or social cares, oncoming mental or nervous disease, malnutrition, indigestion, bad habits, etc., but these measures will all help to a successful goal.

THE USE OF VENESECTION IN PROPER CASES.

By William Wormley, M. D.

THERE was no point in therapeutics more settled of the present century than the question of in the minds of medical men in the first half bloodletting; if the student will open any of the great medical books of that time he will find universal testimony in its favor. Now it has fallen into disrepute and disgrace. How it fell is an old story, but it has its analogies in many phases of history where a good thing has been abused, perverted, and misapplied until it was turned into an instrument of opprobrium. But let us study some cases at the bedside. The following case has been reported as an excellent example:

In cases of croupous pneumonia there comes a time frequently when the pulse grows steadily more feeble in spite of increasing uses of cardiac stimulants. Often careful examination will show increase in cardiac dullness to the right, and especially over the position of the right auricle; simultaneously one may see that cyanosis is far in excess of that accounted for by the extent of lung involved—in other words, it is not cyanosis from lack of lung area, but cardiac cyanosis from over-distension of the right side of the heart. The following instance illustrates what bleeding from the arm can accomplish in such cases, although unfortunately the case terminated fatally owing to the condition of all of the organs of the body.

A man aged forty years was transferred to my ward who was a mechanic by occupation. Upon admission to the ward he was found to be too much distressed by intense dyspnea for a history to be obtainable. He was a large, stout man, with florid complexion and apparently an abuser of alcohol. Dyspnea was marked, the breathing being rapid, wheezing, and accompanied by an expiratory grunt.

Physical examination was practically negative save for the discovery of numerous dry, sibilant rales over the whole chest and fine moist rales in the spinal gutter on the right side. The patient was too ill for perfectly satisfactory examination, all except the dorsal decubitus causing serious opposition upon his part and increase of the dyspnea. During the night after admission he had a violent attack of dyspnea, during which the respirations numbered sixty in a minute. Next day the dyspnea was very great, the face and chest being markedly cyanosed. There was some cough, but no expectoration. The pulse was rapid and feeble. Delirium was so active that straps had to be applied. The urine withdrawn by catheter was acid, dark-amber in color, and contained a trace of albumin, with hyaline granular casts. When I first saw the case upon this day he was deeply cyanosed, the breathing was shallow, rapid, and labored, the pulse almost imperceptible at the wrist; with distinct dullness beyond the right border of the sternum. The resident physician bled the patient from the median cephalic vein of the right arm; as soon as the blood began to flow the cyanosis lessened, the respiration became fuller and less noisy, the radical pulse became fuller, and after the withdrawal of seventeen fluid ounces the condition in general was much improved. After venesection the patient did fairly well for a few hours; then renewed respiration distress occurred, cyanosis returned and gradually deepend until death took place, thirty-six hours after admission.

At the autopsy there were found: Croupous pneumonia in the stage of red hepatization of the right lower lobe, chronic parenchymatous nephritis, fatty and cirrhotic liver, and the heart in a state of left ventricular contraction and right ventricular dilatation.

The tremendous revolt against venesection, however, has been so widespread and complete that it is only by persistent advocacy that we may hope to see it rehabilitated, even in its most important applications. Overfilling and incomplete emptying of the right ventricle may be brought about by any persistent obstacle to the free passage of blood from this chamber to the arterial circulation. Nearest the right ventricle the obstruction may be in the pulmonary circulation, as from bronchitis associated with the diminished vascular supply consequent upon the atrophic changes of emphysema, etc., or it may depend

upon defects of the mitral orifice and valve; finally, but only after secondary and relative incompetence of the mitral valve, alterations at the aortic orifice and valve may form the exciting cause. Of these influences the mitral changes have most potency, mitral stenosis more notably, for reasons that are obvious and not necessary to be designated here; but in consequence of the more frequent occurrence of mitral insufficiency the latter lesion will be found to be the exciting influence in the majority of cases. Disturbances of the right side of the heart are not very prone to occur so long as hypertrophy of the ventricle is able to supply an increased energy sufficient to afford compensation to the obstructed circulation in front of it. It is only after failure of this muscular hypertrophy has begun and weakening of its power with dilatation and increased capacity of the ventricular chamber have set in that the condition we are considering is apt to arise. This usually occurs by a gradual development after long standing and slowly augmenting valvular defect; but it not unfrequently is precipitated by sudden intervention of obstruction in excess of the already present. The most important of these intercurrent processes may be located in the lungs, as from a pneumonia, a bronchitis, especially in the presence of old emphysema.

However occurring, when this condition is encountered venesection affords a remedial measure of remarkable power, but when the engorgement is the consequence of a rapidly developing obstruction to an already laboring right ventricle, its good effects appear, at times to be almost magical. The clinical indications for venesection under the circumstances we are considering may be quoted as "general venous congestion with arterial anæmia indicated by cyanosis with dyspnoea, turgid veins, swollen liver, albuminuria, pulsation in the jugular veins, and at the epigastrium, functional incompetence of the tricuspid valve (sometimes indicated by a systolic murmur and a weak, small, and fluttering radial pulse. The pathological chain of which these symptoms are the expression usually begins with an arterial anæmia, having its origin in an unfilled or an imperfectly emptied left ventricle, unfilled in consequence of an obstructed mitral orifice or an obstructed pulmonary circulation; imperfectly emptied in consequence of an insufficient mitral valve. The blood obstructed in its onward passage in one or the other or all of these ways backs up into the system of the right heart, the pulmonary artery, the right ventricle, the right auricle, and into the general venous system.

The brunt of the struggle is with the right ventricle, which, unable to overcome the obstacle in front by its systole, distended during diastole by the increasing pressure of blood from behind, becomes overfull, stretched, incapable of orderly and vigorous contraction and in immediate peril of succumbing to the burden thrown upon it.

Bleeding in pneumonia has attracted a considerable share of attention and still presents points upon which there is much difference of opinion. The use of bleeding in the first stage of pneumonia has not been tried by me, as I think I have not seen cases where there was the text-book crepitant rule where I have not also had reason to believe that there was already some consolidation of the lung below the surface; in other words, I do not remember ever having seen a case of frank pneumonia in the first stage as described in the text-books. After pneumonic consolidation the heart is in reality the organ most affected, though the lung is the organ diseased. The heart—that is, the right ventricle and auricle—has its work vastly increased by reason of the consolidation.

If, now, the heart be unable to bear this strain, the right auricle and ventricle become distended to such an extent that their power is greatly diminished, or, perhaps, entirely suspended. With such an enfeeblement of the right heart the pulmonary circulation becomes sluggish, the left ventricle is poorly supplied with blood, and the pulse at the wrist is small and feeble. At the same time cyanosis develops from failure of the lesser circulation. The condition of affairs above alluded to is also indicated by the presence of a feeble pulse, with the heart beating tumultuously, and it may be with a fair degree of force, while percussion will show an area of cardiac dullness extending beyond the right border of the sternum and a distinct area of dullness in the third right intercostal space. In such a case, the letting of a few ounces of blood relieves the right side of the heart from pressure, possibly sufficiently to allow of its continuing its work, at least for a period.

Another reason exists for right-sided engorgement besides the mechanical interference with the pulmonary circulation; high temperature and the pneumonic poison are likely to produce such degenerative changes in the myocardium that dilatation can occur with little or no sufficient mechanical cause in the lung. In these cases the value of venesection is not quite so evident, although I think that here also venesection is justifiable if the right heart be over-distended sufficiently to seriously embarrass its working power. The main reason for the general lack of belief in the utility of bleeding in the latter stages of pneumonia is doubtless the fact that in the experience of many, as in my own, it has been found that but few cases recover after bleeding. This is simply due to the fact that only bad and almost necessarily fatal cases have this distension of the right heart sufficient to embarrass its action to any very marked degree. In the young and vigorous in non-alcoholic subjects, and in those with sound kidneys, the heart-muscle can keep itself toned up sufficiently to prevent overdistension; and these cases do not die from the heart, but from the lungs or brain. Although a few of my cases have died after venesection, I do not hesitate to say that in no case has the bleeding failed to produce some amelioration of the symptoms, and that in all cases it seemed to at least postpone a necessarily fatal issue. I may add that after venesection the cardiac stimulants and tonics may be productive of some benefit, where before the abstraction of blood their use was apparently futile. Another class of cases has interested me from the same point of view. Just as in pneumonia, the chief mechanical stress falls upon the right side of the heart, so in mitral disease it is this portion of the heart that most suffers from the existence of the lesion, although it itself is free from organic disease.

A man was brought to the ward shortly before one of my visits, suffering with intense dyspnea amounting to orthopnea, with livid, cyanosed skin and mucuous membranes, and with distended superficial

veins standing out on his neck and forehead like leeches filled with blood. The pulse at the wrist was almost imperceptible; the heart was acting tumultuously, but with a fair degree of force. A loud murmur was to be heard over the whole precordium, but could not be localized and the direction of transmission was unascertainable owing to the noisy breathing and the large bubbling rales. I told the resident physician to perform venesection if the condition did not shortly improve after a few doses of digitalis and ammonia. The operation was necessary in the course of the evening, and if I remember rightly, ten fluid ounces of blood were withdrawn. The patient could then recline on the bed and the pulse at the wrist grew stronger. When I saw the man on the next day I would hardly have recognized him. He was lying down with the head and shoulders but little raised from the bed, his pulse was of good force and volume, cyanosis and distended veins had disappeared, and it was possible to determine the existence of a loud systolic murmur plainly heard at the scapular angle. Venesection in cardiac disease was new to me. Since then I have frequently witnessed the same effect in patients with mitral disease, whom, I am convinced, would have died from paralytic distension of the right side of the heart had some relief of tension not been given promptly.

In years gone by there have been recommended many therapeutic measures to restore relief to this condition of passive engorgement with greater or less success, but no measure will so safely, so pleasantly, so speedily, so frequently afford relief, even avert impending death as the judicious practice of venesection. By it the torrent of blood is checked and diverted, the ventricle relieved of the pressure, contracts, gathers force and rhythm, and relief, often but temporary, rarely permanent, is secured. Naturally, in many cases, all remedies fail and the patient dies; in many again the relief is only transitory, but in a fair number where the circulatory obstruction is acute, as in the sudden bronchitis that at times surprises an old emphysema with its resulting weak heart, the relief will be permanent. Taken altogether, I desire to claim openly that in the conditions above described, where the danger to the life of the patient is rapidly developed and imminent, the letting of blood offers greater chances of relief than any other remedy.

From a number of cases of successful venesection for the condition under discussion, I have selected the following:

"A man, unmarried, 45 years of age, a builder and contractor, of medium height and robust frame, who had a healthy youth and early manhood, with a history of scarlatina or diphtheria, some rheumatic pains in the angle joint three years ago, but not severe enough to disable him; he had been addicted to rather free alcoholic indulgence, and is of an active, energetic temperament. Not known to have heart disorder until the preceding winter, and had never fainted nor complained of palpitation. Early last spring he consulted a physician on account of dyspnœa. He became orthopnœic and mildly cyanotic, and had very feeble and irregular heart action. This condition lasted a number of weeks, and he slowly improved and finally resumed work. There was said to have been no albuminuria and no dropsy. He did fairly well until attacked by the prevailing influenza. This followed an ordinary course and left him with some bronchial catarrh. Later he was seized with severe cough and dyspnœa. Symptoms of active pulmonary engorgement rapidly developed, and two days later I found his cough was almost incessant and brought up a very copious amount of current-jelly like sputum, lacking, however, the tenacious appearance of ordinary pneumonic sputum. It runs very free and liquid. He was breathing noisily and with great difficulty. Coarse and fine moist rales were heard all over the chest, quite masking the heart sounds. There was no tubal breathing. The percussion was dull, but not flat, over both lower lobes posteriorly, and there was no albuminuria. I gave a hypodermic injection of ¼ grain of morphia with 1.150 grain of atropine sulphate, with 12 drops of tincture of digitalis given every third hour. A milk diet was ordered. Next day he was easier. Sputa still copious and deeply stained; orthopnœa; respiration, 48; temperature, 101; cardiac pulsation, 120 to 140, very irregular, intermittent, and unequal. Many pulsations not perceptible at the wrist. Apex heat felt in fifth intercostal space 2½ inches to the left of left nipple. Very little heaving impulse. Cardiac dullness (relative) extends to the level of the fourth rib, from the right border of the sternum, 11 cn.; in fourth intercostal space, from 1cm. to right of right sternal border, toward the left 16 cm. Heart sounds heard with difficulty, but a systolic murmur, not loud, but of a rasping character, was detected.

"For three days there was no decided change, and the cough, dyspnœa, cyanosis very pronounced and surface bathed in cold sweat. No nausea, continued digitalis. Complained of intense pain in right inframammary region and hypochondrium. Border of liver dullness two finger-breaths below costal margin. This region was quite tender to pressure. Next day I found his chest clear, sputa losing color, but general condition very bad. Some delirium, cyanosis increased, extremities cold. Surface bathed in sweat, slight albuminuria, with some œdema of ankles, while his expression was very bad. I ordered eight ounces of blood to be drawn by cups from the right hypochondrium; immediate relief of pain and much easier respiration followed. His pulse became slightly stronger, but systolic still most incomplete. Strophanthus was ordered, but his condition grew so rapidly worse that it was abandoned. When the cupping was done, death seemed imminent. Pulse almost imperceptible at the wrist, deep cyanosis, urgent dyspnœa, cold sweats, slight albuminuria. Next day some general improvement in the morning, but symptoms all became aggravated during the day, and at 10 o'clock p. m. was in extreme distress. Pulse at the wrist 96, while at the præcordium 120, very unequal pulsations could be heard. Eight ounces of blood were rapidly drawn from the right arm. While the blood was flowing, the patient expressed decided feelings of relief, and the radial pulse became at once stronger and more regular. He presently fell into a sweet sleep in a semi-recumbent position. His complexion cleared, his surface became warm and dry, and the most comfortable night he had had followed. Later the cyanosis disappeared, as had also the albuminuria. He took nourishment well and gave every evidence of improvement and later went back to business.

Stewart, in the "Practitioner" for July, 1893, upon

the subject of "Myxedema treated by Thyroid Feeding," lays much stress upon the value of venesection in certain cases of heart-failure, while Liebermeister recommends the measure and has also noted how, as the flow from the vein progressed, the pulse improved. There is, however, of course, grave danger to be apprehended from repeated bleedings in organic heart-disease, and the measure should be looked upon merely as palliative.

No doubt, in uremia, venesection does good where eclampsia is present. It will sometimes not only stop an otherwise uncontrollable convulsive tendency, but will leave the patient subsequently in better condition than before the convulsion necessitated the employment of the remedy. It hardly seems possible that the small quantity of blood withdrawn could remove an amount of poisonous material sufficient to have any decided effect; but that this may be the explanation is rendered probable.

Bleeding, in aneurism, is reported to give great relief to the pain that is so prominent a feature is some cases. I have never resorted to its use, chiefly because I have obtained very good results in this respect from the employment of nitroglycerine in the acute attacks of pain, and iodide of potassium in the intervals. In cerebral appoplexy there is no way of immediately relieving blood-pressure, thereby preventing further extravasation, and allowing the ruptture to be closed by a thrombus, than by the withdrawal of blood from the arm. It is to be borne in mind, however, that it is only in the hemorrhagic form of apoplexy that the remedy should be employed.

THE PRIVATE CARE OF THE INSANE.

By M. E. Fitch, M. D.

SOME weeks ago the attention of the writer was called to the question of hospital care of the insane in a rather curious light. The same experience has occurred occasionally before, and it has thrown him into much perplexity. I was called a month ago by a lawyer to examine a case, with the view of committing a boy to a hospital for the insane. His history was as follows: He was seventeen years of age, large and well formed, fairly stylish in appearance, but on close view showing a very weak face, no stability or determination being noted. He had a very bad personal history, he had run away from home and had been living in a cheap boarding house with a married woman, old enough to be his mother. He did not confess to use anything, but to his own lawyer, who had been a life-long friend, he acknowledged they practised very unnatural sexual indulgence almost constantly. His father was dead and his mother had remarried. I found her an intensely hysterical, neurotic woman, having so little control over her feelings that she wept on the shoulder of every man who was present at the examination. The boy had been arrested and thrown into jail for raising money under false pretenses, and the intention was to utilize me to save the boy from jail and at the same time to place him under restraint in a private asylum. His family history was bad; his father had been a profligate of the worst description, even going so far as to attempt to bring prostitutes into his family household to live. He had died from his sexual excesses at a comparatively early age. The mother had absolutely no control over her feelings or her family, and the boy had grown up without restraint or discipline. He had been allowed to live with this middle aged woman without especial protest until financial troubles arose. The only other child, a girl of fourteen, was inclined to be bad, I was told by the lawyer in the case, although nothing definite had developed.

I examined the boy carefully; his answers were clear and to the point. He had no delusions, his memory was clear, and he told a straightforward story. He lied about his past life and did it glibly and skillfully, but I could see that he knew that he was attempting to deceive me; in fact I could only make it out that he was a wayward boy, but of actual insanity sufficient to lock him up I could not find a trace. I was sorry for the family, but I refused to sign a certificate to send him to an asylum. Within twelve hours, however, the family succeeded in getting two physicians to sign this application, and he was bundled off to an asylum. The lawyers in the case came to me privately and stated that I would run no risk in the matter, for they would see that no objection to the transaction would rise, and they delicately hinted that of course if I could not sign a certificate and swear to it, I would get no remuneration for my ex amination; also I was told that there would be no trouble at the asylum, for the superintendent there never bothered to discharge anybody sent in.

This experience had occured to me several times before, with the same result. I have refused to sign any certificate to save some one from jail or from their bad habits, and yet off to an asylum quickly they went. This has set me to thinking of the careless way in which many patients are sent to the asylums, and the careless way in which they are handled when there.

In my younger days I was resident for two years in a large state hospital for the insane, and I blush now to realize how little like human beings those patients were considered. Packed in like sardines, handled in gangs, sent to meals, sent to bed, given individual treatment only when physically needing it, I do not wonder at the small number of recoveries; compelled to sleep in many cases on the floor or mattresses brought out for the night, under the intelligent care of emigrant Irish attendants, who alone are willing to work for the miserable wages given; our treatment of the average insane is still far from perfect.

That we do not understand yet the methods of treatment is seen, for example, in the various bands of musicians that have been started in various institutions. Every superintendent will tell that it is hard to keep these organizations intact, because of the many recoveries among the players. This is a startling consideration; here are cases staying year after year without recovery along side of similar cases which are recovering because of the use of pleasant employment, giving the patient something to live for and look forward to.

It is very easy to bundle an insane case off to an institution, and it seems a very easy solution of an ugly problem, but the question arises, is the physician doing his duty who invarably follows this course? We know of the great preponderance of recoveries in cases of early admission, and yet it is to the poor that must go to charitable or State institutions that our efforts must be directed. I will at once exclude from consideration, well cared for, private institutions where each case is studied and treated on its merits by specialists trained in their work. Unfortunately, the expense of these places is tremendous;

it is generally impossible to get rates less than twenty dollars a week, while the figures may run up into three figures, weekly. The average family cannot stand such expense steadily as a rule.

Of course, there are cases in which no discussion can arise as to the advisability of home treatment. Take for example a deserted woman, bereft of husband, parents or supporters. She is living around on charity, melancholiac, which has sunk into a mild dementia. Such a case must go to an institution, and anything she gets there in food, lodgings or treatment is far above her previous experience.

It is not an easy matter to find the proper balance between the patient's wellbeing and his mental and physical happiness. There are cases of the more appreciative class where outside care, although more troublesome, will produce better results. To allow the fullest freedom that is compatible with the welfare of the insane person is the problem, and the fact that if we can get quiet and regularity in domestic life without detriment to the patient's condition or the safety of others, we have done a great deal.

There are many potent reasons why an insane person should be treated privately, if possible. First there is the tremendous injury to the patients career in the future from the universal prejudice against inmates of insane hospitals. It injures his social standing, it renders his chances for employment very poor. No employer, as a rule, wants to put a man from an "insane asylum" in a position of trust or in fact in any positon.

Again in many patients the dread of an asylum life is a terrible depressing influence. Even to the attendants and physicans this influence extends; I know many hospital physicians who require regularly stimulating outside recreation, often of the frivolous character to counteract the hospital influence. How much more depressing is the life of the patient shut up at all times with many other illustrations of dread disease before his eyes. Moreover, a patient, one if a thousand or two thousand, is lost in his identity; it is simply impossible for him to receive the personal care which he might get outside or with but a few others.

Of course, every physician has found that curious phase of insanity that the insane patient frequently does better among strangers than at home. Again and again has the hospital superintendent discharged or sent home on probation patients who have been doing nicely, only to get them back again in a few weeks or months with a bad history. Home life, irritating circumstances, depressing influences around the escal hearthstone have all to be reckoned with.

Private care may be subdivided into the various phases of travel, home care, private quarters and small establishments for mental cases. No general rule can be laid down for these cases; each one must be studied on its merits, consequently I can offer only general suggestions, which must be modified to meet special wants.

In considering the question of travel we realize that there has been a great reaction against this method of treatment in the past ten years. In the first place it is not suited to the actually insane, but to those on the threshhold. Travel is exhausting, the regulation of food and rooms is impossible, the sights fatiguing and bewildering. Especially in cases with a suicidal tendency is traveling hazardous, or those with delusions. The best cases for travel are those who are depressed, suffering from insomina, those to whom petty annoyances have assumed the appearance of great calamities, those who are depressed, especially by their daily life and work. In such cases, land travel is generally beneficial. In travelling, a companion, lively and sympathetic is absolutely essential to awaken interest, to keep the patient's mind from harmful subjects and to hold constantly pleasant ideas up for contemplation. A friend is oftener better than a relative for this task, one selected who is known to have a pleasant stimulating effect on the patient. The ideal attendant is a cultured, wellinformed young physician. Again convalescent cases are often benefitted by a change of scenes, especially those cases of fort bebrile insanity. But fatigue must be guarded against and all bustle and confusion avoided.

Stedman has written so beautifully on the subject of home treatment of the insane that I quote him as follows:

"But whatever the form of the malady or situation of the patient, it is often the amount and kind of attention the physician gives to the case that will ultimately determine between home and the asylum for the patient, and perhaps between recovery and confirmed insanity. This is not platitude. There is little doubt that more cases would do well at home if they were as carefully and regularly observed as are cases of physical disease. It is not enough to study an apparently mild case of melancholia occasionally and at long intervals;; to have him come to the office, or to inquire of the family how he is getting along. It is a lack of attention to details, of close inquiry into the patient's line of thought, both from him and the members of his family, to ascertain the progress of the disease, that has made more than one case turn out disastrously. The fear of suggesting suicide to melancholic patients by inquiries in that direction I am convinced is exaggerated. I have never known it to occur, but on the other hand, the instances when occasional unobtrusive but minute inquiry of the patient and family as to this particular has been avoided, and disaster has come, may well make us consider whether one's whole duty is done when this precaution is not taken. The neglect of attention to the details of the patient's requirements has led to the disrepute into which home treatment of proper cases of insanity has fallen, quite as much as the attempt to treat unsuitable cases in that way. Home treatment for curable cases seems to me to bear to that of ordinary disease the same relation as does the capital operation and the after conduct of the case. It requires much time, constant watchfulness, attention to a variety of minor details and the summoning of special skill in emergencies. Before counselling home treatment, the feeling of the patient toward the members of his family is an important matter. If he has strong and increasing antipathies toward one or more of them, and dangerous delusions about them are persistent and uppermost in his mind, or if suicidal thoughts and attempts are prominent manifestations, little is to be gained and much valuable time may be lost in delaying his removal from home, unless the physician is prepared to convert the house into a hospital on the presumption that the case is a curable one. Often,however, the home feeling remains strong, as is shown at more rational intervals, and at no time is alienation from

those dear to him appreciable. To such patients it is an immense satisfaction to have their friends at hand. Moreover, the influence of a relative in calming a patient can often be exercised by no other. Cases marked by great anxiety in which ordinary petty annoyances are so magnified as to weigh down and distress a patient are better for a change from home. The effect of the patient upon the family, also, is important. If he keeps the household in turmoil and wears upon his relatives so as to affect their health and spirits by the constant attention he requires or unnecessarily exacts, home is not the place for him. It is sometimes best if the patient remains at home to send away any children there may be in the family, as they are an especial source of anxiety and unnecessary worry, particularly to a mother because of their unthinking demands or because she imagines them to be neglected.

"Taking up the various forms of insanity, we find that melancholia is the commonest form treated at home; this is owing to the fact that cases of this variety are more numerous than any other, and also because its manifestations are less pronounced and easier to care for. Quiet cases are often able to live at home without harm for years. Unfortunately, we must remember that the mildness of an attack of melancholia does not mean that there may be suicidal or other impulsive outbreaks. Here the patient's family history is of value, for such cases are highly hereditary.

"Acute curable cases if in good circumstances can be treated at home. Folsom has reported extensively on this point; he has treated these cases as if they were typhoid fever or fracture cases. Here the home is made into a hospital, and the cases treated methodically by nurses.

"In perpetual insanity, senile insanity and dementia, cases can be treated at home with excellent satisfaction. But when it comes to hysterical insanity and dipsomania, hospital treatment is generally better. Hysterical insanity has been benefitted by hospital routine while cases of dipsomania, although not properly coming into the category of insanity, are surpassed in difficulty of management by few of the actually insane, and in far-reaching effect of the malady upon the patient and his family: 1. Because of the length of time before their condition is realized, and the credulity of the family in the victim's promises of reform, and particularly by the fond mother's natural trust and long-sufferance of the son's disgraceful life, which fatally delays proper treatment. 2. The absence of proper provision for such cases in the shape of a closed asylum exclusively for that class, under a board of disinterested trustees and State control. 3. The difficulty of keeping them in a lunatic asylum when once committed thence, owing to their cunning, the dislike of the medical officers for that class of cases, who are a disturbing and otherwise trying element, and the importunities of the patient, and his relatives sometimes, before he has become sober. Advice of great value is not to be had concerning these patients under these circumstances. A State lunatic asylum to which the patient is legally committed, as can be done in Massachusetts, is, after all, by far the best place for him; that the friends should be discouraged as long as possible from removing him, and the superintendent begged, as often as we can decently do so, to keep him there. Small private asylums, particularly where there are insane inmates, are unsuitable places, and but temporary makeshifts, for inebriates.

"It is not a common practice in America to line separate houses for insane patients as has been done for years in England; it is expensive and really the same as turning the patient's own home into a hospital. The small private establishment for insane or new cases is excellent, but generally, as I have said, are expensive. Many cases can be treated best in this way.

"A patient's family, for example, is scattered, and no single member is ready to bear the anxiety and be responsible for the patient's care at home, and its expense. The case may be of too severe a type for home management without greater sacrifice than the family is willing to make, and they shrink from sending him to a large asylum. The patient has possibly been living at home until he has grown too difficult to have in the family, who have been tried to the utmost. The anxiety and care may be telling upon the health of the husband or wife. Beside recent cases there are varieties of the chronic class of insanity, the subjects of which can be made very comfortable in this way. Examples of suitable cases are the man or woman with fair intelligence, but deficient self-control, whose mind is weakened (congenitally, or by an attack of insanity), for whom family life has proved unsuccessful, owing to bad tendencies and mistaken indulgence; the case of doubting insanity which has gradually grown to dread everything, and by whom no authority that can be exercised at home is respected. Hysterical and neurasthenic cases, of a severe type, are often most amenable, when thus situated away from too sympathetic friends, and under control amid fairly congenial surroundings. The demented general paralytic can be treated at a well-conducted home-hospital of this character, where separation of uncongenial patients is available, at considerable saving of family worry, mortification and expense. The life of the chronic melancholiac, so situated, can also be made fairly bright; many border-land cases, also, for whom domestic life has proven a failure, are especially susceptible to guidance and control, when exercised among such conditions in a semi-domestic environment. Such establishments benefit from a public dread of asylum-care for a relative, as well as upon the greater privacy to be secured by the method. For the same reasons, patients are often sent from home to irresponsible people for care, who are subject to no supervision themselves, and seek for no medical advice for the patients under their charge. Without a resident physician, none of the classes mentioned can be properly treated in a home devoted to the care of the insane, and expert supervision, capable nurses, companions or attendants to meet the requirements of widely different cases, as well as regular inspection by State medical officials, are essential for the best results.

"The question of the subsequent life of the patient is an interesting one. Here again it is hard to specialize. Some do better living near friends, to others such visits are inadvasable, while others may need their families, while some are unsettled by their relatives. The disposition of the patient must be studied. Each case in its individual factors requires much thought from the conscientious practitioner."

MEMBRANOUS STOMATITIS—COMPLICATING PNUEMONIA. EIGHT CASES REPORTED

By J. M. Frazier, M. D., Belton, Tex.

I DESIRE to submit for the purpose of record eight cases of membranous stomatitis, occurring in my own practice, coincident with and seriously complicating lobar or croupous pnuemonia.

Two of these cases were seen in 1900, two in 1901, and four in February and March of 1902. All the patients were adult young women. All were residents of a female boarding school in Belton. The pnuemonia was of the croupous or lobar form. In two cases both lungs were involved. They were all typical cases of pnuemonia, ushered in with chill, with physical signs so marked that an early diagnosis was easy. In every case anorexia, nausea and vomiting were prominent symptoms from the first—and persisting in most of the cases to the crisis.

The temperature in all the cases was high, ranging from 103° to 106°. The pulse rate varied in different cases, in the graver cases being excessively rapid, 130 to 140. The crisis of the pneumonia was marked and uniformly came on the seventh or eigth day.

The membrane began to develop on the third day of the pneumonia. This I noted particularly in the last three cases. Previous to this I had not noticed its appearance, until my attention was called to it at about the time of the crisis. I am now satisfied if I had examined the mouth I would have found it beginning to appear in all the cases earlier. The membrane, when observed early, was first seen on the arch of the palate, on one or both sides of the uvula. Extending by patches and not contiguously to the uvula, cheeks, tongue, roof of the mouth and under the tongue. As it resembled a thin film of spider web lace, or like the lichen growing on a damp brick wall, of a grayish white color, gradually thickening from day to day and requiring uniformly from five to eight days to mature and exfoliate.

It was firmly attached, and could with difficulty be removed, and when forcibly detached with forceps left a red, raw and bleeding surface. When matured it was a thick, tough leathery grayish white membrane, loosening at the margin and then easily removed. There was in each case marked pharyngeal catarrh, but no membrane noticed on the back wall of the pharynx. The tongue was swollen. There was difficulty of expectorating and secretions were gotten rid of by gagging and vomiting, or by mechanically wiping them out. There was a distinctly bad odor to the breath in all cases. In two cases this was almost gangrenous. These two cases had decided septic symptoms, persisting a week after the typical pneumonia crisis. Much of the membrane was swallowed and appeared in the discharges from the bowels unchanged.

In four of the cases the urine was examined and found to contain albumen, alkaline in reaction, and specific gravity varying from 1005 to 1015.

The pneumonia in all the cases had the usual symptomatic and supportive treatment, milk forming the staple of food.

The last four cases, occurring this year, had ten to fifteen drop doses of carbonate of creosete every four hours.

Delirium was present in two cases, both cases of double pneumonia with septic symptoms. The mouth was clensed with cotton swabs, sprays and washes freely and frequently, all sorts of germicidal and antiseptic agents being used. There was never any evidence of contagiousness from patient to nurse or other patient. I regret that I did not attempt to inoculate some of the lower animals with the membrane to determine more positively this point. Three of the cases had, during the second week of their illness, suppuration of one or both ears, preceded by pain and perforation of the drum membrane.

All recovered, the two worst cases requiring a month for convalescence, and both complained of difficulty of co-ordinating muscular movements. One had difficulty of swallowing and a tendency to regurgitate liquids into the nose. No other evidence of even partial paralysis was present.

As to the etiology of these cases, I am unable at present to satisfactorily explain them. I had many other cases of pneumonia at the same time, and several in the same buildings, without the membrane.

The milk, food and water supply was the same, and careful inspection failed to develop any local cause to account for it.

I had Drs. Hudson, Ghent and Embree, of Belton, and Woodson and McClevy, of Temple, and other physicians see the cases at various times. None of them had previously observed a similar condition of complication. I have been unable to find any published reports of such cases. I believe it is a true parasitic membrane. I have submitted specimens to Dr. Allen J. Smith, pathologist of the Medical Department of the State University. He has taken a kindly interest in the matter, and is making cultures, and I hope will be able to identify the etiological organism.

Believing the cases to be unique and worthy of record, I submit this crude report.

Dr. Allen J. Smith makes the following pathological report: Two germs were recovered from the false membrane submitted to me. One was a bacillus, sometimes occurring in chains, usually isolated. It measures 2½-4 m. in length by a little less than 1 m. in thickness. It is motionless; grows well at body temperature, less well at temperature of the room. Grows well in agar and on blood serum, producing a white, rather dry surface growth, flat, in rounded colonies with slightly fringed edges. No liquefaction of the serum. Does not liquify gelatine. Stains with the ordinary laboratory aniline; stains not well with Gram's, fairly with Loeffler's blue. Produces a slight turbidity in bouillon, diffuse, without production of gas. Is aerobic. I regard it as a pseudo-diptheritic bacillus of a somewhat atypical variety. No inoculation in animals done.

The other germ is a diplococcus, not the pneumococcus, but I am unable for lack of time at present to carry it out to determination.

SUGGESTIVE THERAPEUTICS, WITH REPORT OF ITS ACTION IN A CASE.

C. H. Dixon, Haliday, Mo.

It is not my expectation to introduce anything new to the members of this Society of whom the greater part at least have had larger and more varied fields for research than myself, but in the case I will report, give one which I think will be found to be of rare occurrence. In choosing this subject I realized it to be the one part of the practice of medicine which

is greatly neglected, or if applied at all has been given without a thought as to its results, be it for better or worse.

Our State has been referred to in some of our journals, as the happy land of "fake medical practice," and truly so, as in the few years past every fake of every known cult has been allowed to run at large at will in Missouri. And why? Because the majority of practitioners do not pay enough attention to the mental desires of his patients.

It is becoming increasingly clear that a physician cannot practice successfully unless he keeps in line with his patient's mental processes. The persistent indulgence of an unhealthful state of mind, will go far to undo the good effects of excellent medication, which will have a tendency to perplex the doctor and discourage the patient. Few patients understand that the work of getting well is to be done by themselves, that the doctor can only point out the way, and place the system in a favorable way to recuperate and overcome the effects of the disease.

The average person places the responsibility for a cure on the doctor and expects a sort of vicarious recovery.

And it is by taking advantage of these very facts and using them in their way, that Magnetic Healing, Christian Science and other methods of charlatanism have attained the financial success that it has.

It is high time that this view of the patient was dissipated by his attending physician that he will be enabled to co-operate efficiently with the doctor's efforts.

To successfully do this the doctor must familiarize himself with the mental operations, habits, occupations, etc., of his patients.

Set the patient's mind right then the indicated drugs and hygiene will ordinarily remove the obstacle to an ultimate recovery.

Many patients hover always on the brink of invalidism because they are morally feeble. Moral weakness always begets self-indulgence, and constant self-indulgence lowers the powers of resistance and depresses vitality.

Religious sentiment lies near the surface in such natures, which if evoked and managed by skillful hands, can be made the means of effecting a cure.

Ordinary ambition cannot be aroused in weak people, but the religious can be appealed to.

Some intuitive sense of this fact is responsible for success of Christian Science, magnetic, and similar cults of the times.

They appeal directly to that great army of neurotics who can be moved or permanently benefitted only through the intelligent direction of the emotions.

To have full confidence and be anchored in the firm judicious management of an understanding and sympathetic mind, is a haven of relief to such storm-tossed humanity incapable of making up their minds or knowing what they want, flying constantly in one direction or another for help, constant to nothing, beset by obscure pains and mental torment, there is no health for them.

To have their entire emotional capacity aroused and fixed in a single direction by a greater controlling intelligence may seem like fanaticism to us, but is undoubtedly restful to them. People differ, and require a variety of actuating motives and objects; this the successful physician of the future must realize and utilize the knowledge to the mutual benefit of himself and his patient. After his physical examination he will make himself acquainted with his patient's mind, in order to know how to deal with him. The physician needs imagination, and the practical study of mind will cultivate and develop this faculty which will enable him to draw nearer to his patients. But while exercising these means the doctor must understand that harm as well as good may result if suggestions are made which will not be realized by his patient, and to show how this may be done is illustrated by the following case:—

On March 16th, Mr. P. called at my office and informed me his wife was expecting to be confined soon and engaged me to attend her, and on the afternoon of the 20th a messenger came for me. I arrived at the house about 8:30; found Mrs. P. in bed lying very comfortably, the bed prepared, baby clothes lying near, and the usual preparations made for such occasions.

Taking a seat by the bedside, I elicited the following information. Age thirty-two, mother of two healthy children, three abortions self-induced since birth of last child, and health somewhat impaired, presumably caused by these abortions, and that she had been informed by her former physician that she must stop the practice or she would irreparably injure her health. On inquiring from what she dated her conception, she told me her sickness appeared June 23-25, 1900. Menstruation had been very regular and natural before that time, but that she missed in July, and about the time for the appearance of the flow in August she experienced some bearing down sensations, but no discharge. After experiencing these feelings some days, called in Dr. J. who gave her two doses of medicine and in a few hours the flow became very profuse. In September the same feelings were experienced, and this time called on Dr. L., their old family physician, in whom she placed implicit confidence, who, after hearing the symptoms without examination, informed her she was pregnant, that the medicine administered by Dr. J. was too strong for her and while it had probably not destroyed the foetus, would, in all probability, retard its growth, that she would probably carry it to full term, but it would be dwarfed, and that if she could carry it out to the time that her health would be better. Acting on this advice, she had quit wearing a corset or tight clothing, and took every precaution to prevent miscarriage. In October, at about the regular time, a thin, watery discharge appeared and had continued at irregular intervals since. After waiting some time and seeing no appearance of labor pains, I made vaginal examination, found the cervix firm and of normal shape and size. Manual examination revealed a fatty pendulous abdomen, breasts considerably enlarged, but no indication of a child or even the presence of a tumor of any kind.

I immediately informed her of her condition, much to her chagrin, and which she would not readily, believe, but finally convinced her of the fact.

TRACHOMA.

By James M. Crawford, M. D., Atlanta, Ga.

THIS affection of the lids, known by more than one alias—Egyptian sore-eyes, chronic blenorrhea, follicular conjunctivitis and others—is most familar to us all under the misnomer of "granulated lids.

We are all also conversant with the characteristics of this malady, if indeed, it can be called a malady. Be that as it may, conjunctival troubles, known even in remote countries as granulated lids, cause more annoyance to and incapacitate a greater number of persons for the pursuit of their various vocations than all other eye troubles combined. Just here, however, let me say that the symptoms of trachoma, as well as the course of the disorder, is not the same the world over. Even in our own America we find trachoma in the Western States differing from that found in our Southern States. This is due to climatic and atmospheric causes—high winds, dust, etc. While in the Western States a large ratio of the inhabitants have some form of conjunctival trouble, taking the name of granulated lids, I am glad to be able to say that on account of our mild climate, uniform temperature and the absence of scorching winds, we have little of this affection in Georgia. I am aware that for years, even here in this State, nearly all though slightly irritated lids have been called granulated lids, even by those claiming to stand at the head of the profession.

As a matter of fact, whenever a subject presented himself or herself with a reddened conjunctiva, the same was christened "granulated lids," and accordingly treated for months consecutively, provided that the endurance of the patient did not become exhausted. It was not thought at all necessary to examine the patient's eyes regarding refraction. Each of you know what a household expression "granulated lids" has become. I haven't a doubt but that one-half the people in Georgia have been told by some doctor or layman that they had granulated lids. One object of this paper is to disabuse your minds of this preposterous error. Let me repeat that there are comparatively few cases which we see in Georgia answering to the description of trachoma. Rarely one which cannot be accounted for and explained, yielding rapidly to treatment if the treatment be begun before changes take place that cannot be overcome.

Many cases of so-called granulated lids are relieved by the adjustment of suitable glasses. I recall now the name of a patient who was cured of a bad case of persistent so-called granulated lids in about one week after proper glasses were adjusted. He had been treated for three years for granulated lids without any benefit whatever.

So we see that all irritated lids cannot be classed as granulated lids. One other source of this affection is the nose. In two ways a lid affection is set up from the nose, viz., by an extension of the inflammation from the nose to the eyes, through the medium of the tear canal; and by mechanical influence, passive congestion being set up. Note for a moment the condition of any eye, where the turbinal end of the tear canal is more or less closed by an infiltration in the nose. The proper circulation being changed, passive inflammation is set up; which is carried to the mucous membrane of the lids and we have what is so often termed trachoma.

I recall two cases of this character who have come to me for treatment within the last six weeks. One was the eighteen-year-old son of a well-known physician. The young man had taken cold some months previously; during the period of this cold his right eye became inflamed. Persistent treatment of the lids with the usual remedies failed to give relief. On his first visit to me I found that he had a large, soft adenoid. This I undertook to relieve by means of the fingernail, scratching it, as I thought, thoroughly. After persisting in the treatment of the lids for two weeks without results, I removed the adenoid with the curette, which gave relief to the lids, and the patient was dismissed, cured, in about ten days.

The second case was that of a man forty-eight years of age, a salesman; was exposed to a draft and the dust, which irritated the membrane of the nose, also irritated a mucous polypus in his right nostril, of whose existence he was not aware. On his first visits attention was not directed to his nose, since the eye trouble seemed to be his only ailment. Under the usual treatment for ten days for such troubles there was no sign of improvement. Then, to see if there was a complication, I examined the nose and found the mucous polypus, which I removed, and from that morning steady and rapid improvement was noted.

You can probably gather from what I have said, that so far as our Southern people are concerned, we may as well leave out the word trachoma altogether. It is true that we have in many instances a roughened conjunctiva, enlarge papillæ, and adenoid tissue, yet I consider this to have none other than mechanical pathological influence. For this reason we have often seen patients with adenoids having the so-called granulated lids. I hold, therefore, that the simple sago-grained lid is not contagious, and to cure the same we have but to devise a plan by which we can dispose of this adenoid tissue in the lid. To this part of the subject I offer nothing new, believing that the sulphate of copper application, together with a proper adjustment of glasses and the removal of the adenoids in the upper throat, is the proper treatment. One thing I would insist upon your doing, and that is the removal of the adenoids in the upper throat.

Don't understand me to say that lid troubles are not contagious. I do not mean to say that. I do say that the simple sago-grained lid with which we so often come in contact, when the subject is not suffering from catarrhal or gonorrhoeal opthalmia, is not contagious. We see these patients often, more than one in a family. This is where the patients have adenoids, and this sago-grained condition is simply adenoid tissue of the lid.

Just on this line I promise to say more at a later date. Dr. H. F. Harris, of Atlanta, has begun some miscroscopical examinations for me on this line, and I hoped to be able to submit them here. but I was too late in making my request of him, so he has not finished the work. What I expect to show is this: First, that the simple sago-grained condition is simply adenoid tissue of the lid, and that the patient having the same has also adenoid tissue in the upper throat; and second, that these granulations, sago-grained tissue and enlarged papillæ are not necessarily contagious.

RETROSPECTIVE THERAPEUTICS.

Diagnosis of Mammary Cysts. The differential diagnosis of tumors of the breast is an extremely important and oftentimes difficult matter in the early stages when treatment must be instituted if a radical cure for the carcinomatous variety of tumor is to be expected. It is not right, however, to take it for granted that every tumor is malignant, and that the breast must be removed for fear of recurrence or future degenerative change. The frequency with which simple cystic tumors are met with does not seem to be fully realized. R. Abbe (*Med. Rec.*, Aug. 15, 1903; *Med. News*)finds that in his private ward, during the past eight years, he has seen forty-one cases of mammary cysts and fifty-six cases of scirrhus tumors, besides a number of innocent adenomata. In regard to the differential diagnosis he mentions the fact that while the scirrhus tumors are almost always in the upper outer quadrant, cysts may be located in any part of the gland with a slight predominance only in the upper and outer segment. Thirty-three out of forty-one cases of cysts were in patients between forty and fifty years of age. This tendency to fibroid changes occurring during the atrophy of the climacteric has been noted by other observers. The contents of the cysts was usually an opalescent whitish and turbid fluid, the deposit on standing showing a considerable amount of fatty granular matter. The gross characteristics are usually those of a hard tumor in any section of the glands, usually placed rather deeply, never dimpling the skin like a scirrhus one or drawing on the nipple; sometimes quite a flat ovoid, and in the majority of cases, not giving a distinct sense of fluctuation. This deceptive hardness of the cyst makes the diagnosis impossible by palpation, and yet by the simple use of the aspirating needle the nature of the mass can be easily determined. The author strongly advises the use of this harmless method of diagnosis, for frequently a supposedly malignant tumor, which will demand the sacrifice of the breast, may be quickly and easily made to disappear permanently by the use of the aspirating needle and syringe. In only two cases did the cyst refill, and in these a second aspiration proved sufficient to secure a permanent cure. The use of this method will frequently prevent a serious mistake in diagnosis and enable the general practitioner to perform a phenomenal cure.

Diphtheria Serum in Pastilles. What the Pasteur Institute considers the most effective blow yet dealt diphtheria consists in a discovery just formally announced to the Academy of Medicine by Dr. L. Martin, with the collaboration of Dr. Roux. Martin has found that Roux's famous anti-diphtheric serum can be administered to patients in the form of pastilles or bonbons as well as by means of subcutaneous injections. Dr. Martin explained to the Academy that the serum is useless for the destruction of the bacilli during the convalescent stage of the disease. Throughout that period the throats of patients are still full of contagion —a condition which is responsible for the fearful spread of the disease. By direct contact of the pastilles with the throat the bacilli are destroyed—an effect obtainable in no other way. It is also a convenient form in which the serum can be administered to nurses or persons who are in the vicinity of those affected with the disease, and, it is claimed, gives immunity from contagion. The Academy passed a vote of honor to the discoverer, whose experiments have left no doubt of the validity of his theory.

Sambucus Canadensis for Dropsy. Dr. H. E. Randall, in "Phila. Med. Jour." (Southern Clinic), says that the fluid extract of the North American elder (Sambucus Canadensis) in 1-4 to 1 teaspoonful doses, three or four times daily, comes as near being a specific for dropsy as anything he has ever used. It does not seem to matter whether the dropsy is due to heart or liver or kidney mischief. This observer has been disappointed like the rest of us in his use of cathartics and diuretics in dropsical conditions. He feels sure of the good effects of the elder.

The Teeth and Digestion. Dr. D. D. Smith ("Proceedings of the Philadelphia County Medical Society," January 31), in a paper on "Mouth Infection Due to Natural Teeth," refers to an editorial in the "Lancet" for November 15, 1902, in which it is implied that "children suffer from impoverished nutrition because of caries and inability to masticate food," and maintains that "this presentation should be received with caution. The facts are that with modern culinary methods, neither perfect tooth mastication nor mouth insalivation are indispensable parts of the digestive process. True it is that free and comfortable mastiaction contributes greatly to the pleasures of taste and ingestion, and to that extent favors stomach digestion, but it is an office which can be delegated, as is often done, not only without injury, but also with decided benefit. For the maceration of foods in the mouth, water and other customary drinks may be substituted for saliva without appreciable detriment, in many mouth conditions with advantage to the stomach. That saliva in the inital stages of digestion converts starch into sugar might have been a matter of more consideration before sugar entered so largely into foods and drinks as at present. Now, with a constant over-supply of saccharines, saliva, frequently vitiated and infected as it is poured into the mouth a direct secretion by the salivary glands, might, in many mouth conditions, give place to water in some form with advantage. We may regard water, not simply as a food adjuvant and a diluent to the circulation, but as an integral part of nutrition; as necessary to digestion as to tissue replacement and to the maintenance of life. In this connection it seems reasonable to predict that the student of dietetics must soon broaden his field from the consideration of foods in their analytical ultimates, to embrace other and perhaps more important matters in connection with their structural compounds. The demands of tissue building are such that we seem compelled to accept the fact that the real value of typical foods is dependent, not so much on their ultimate chemical elements, as on the value of the substance in its entirety, before the breaking up of the aqueous, vitalized compound-cells. . . . The indifference of the stomach to mouth mastication and insalivation is clearly expressed in numberless cases of edentulous mouths; in these the processes of digestion and assimilation go forward regardless of tooth mastication, and with no apparent obstruction or derangement; and the remaining oral tissues in all cases will be found in perfect condition of health. It will yet be demonstrated that the real cause of general disease emanating from mouth and teeth is due neither to dental caries nor

disability of mastication, but to constant and perpetual infection through septic matter in foods and drinks and the inhalation of toxic emanations from the persistent and abiding infection in mouths containing natural teeth.

Chloride of Sodium is the curative principle of all the many medicinal baths that are advertised. One pound of salt added to 3 or 6 gallons of hot water gives a seawater or hot spring bath at home.

A woman in Ussher Town, on the Gold Coast in West Africa, on the 18th of May, gave birth to six living babies, five boys and one girl, none of whom survived many days. The same woman had four babies at a birth in 1895.

"Old Uncle Andy" Montgomery, 117 years old, the only Negro ever owned by the State of Georgia, died September 1. He is said to have been born in South Carolina in 1786. There are many evidences to establish his great age. He was well known to many men in the North and East, where he traveled several times on lecturing tours. His oldest son, 80 years of age, and his youngest, 76 years of age, were with him when he died.

Diet in Pregnancy. Paton ("Lancet," July 4; "Journl. A. M. A.") has investigated the effect of diet on the weight of the newborn, and finds that observations, though not numerous, agree so closely that they warrant the conclusion that the size of the offspring depends very directly on the diet and nutrition of the mother during pregnancy. While this explains the easy labors among the healthy lower classes and confirms Prochownik's conclusion that by dieting the mother the children of rickety women may be so reduced in size as to be viable, it also helps to explain the very high infant mortality among the very poor. The physiologic point of chief interest seems to be the demonstration of the limitations in the extent to which the tissues of the mother can be utilized for the construction of the embryo. The nutrition of the maternal tissues seems to take precedence over the nutrition of the fetus. If this were not the case, we would find that badly nourished mothers produce a greater proportion of weight than well-nourished mothers, which is the reverse of what occurs. The mother thus appears to pass on the surplus nourishment to the fetus, and the better the nourishment of the maternal tissues the greater the growth of the young *in utero*.

The "Medical Review" says that Dr. William H. Long and wife are missionaries in China. Not long ago Dr. Long was taken seriously ill. He was 800 miles from any other physician. He diagnosed his case as acute appendicitis, requiring an immediate operation. He explained to his wife the location of the appendix, the necessary cutting to be done, the handling of the knives, the treatment of the wound and other matters incident to the delicate operation. The lady nerved herself to the ordeal and took the desperate chance. She administered the anesthetic and removed the appendix, and Dr. Long recovered.

The French Government has just promulgated a new code of sanitary regulations. This code contains the remarkable proviso that for the future three vaccinations instead of one, as hitherto, shall be obligatory upon all French citizens. The first is to be made during the first year of infancy, the second in the eleventh year, and the third in the twenty-first.

The "Journal de Med. de Paris" gives the particulars of a case which has been pending in the courts during two years. A physician was accused of stealing some statuettes, an umbrella and some cosmetics at a large department store. He confessed that he took the goods to pawn them to get food to eat. He stated that he had only a single patient, who was ill only at long intervals. The case was appealed, but the decision of the lower court was confirmed, condemning the physician to six months' imprisonment.

According to the police of Philadelphia ("Amer. Med. Jour.), it is not an unusual thing for boys to become intoxicated by inhaling the fumes from kerosene. The vicinity where these debauches have been observed is usually that of the railroad yards where the empty oil cans are stationed. The method of obtaining the fumes is for the boys to climb upon the tank car, place their noses over the manhole, and thus inhale the fumes. The effects produced are similar to those caused by alcohol: first a feeling of exhilaration, then a period of stupor, followed by a period of deep sleep. It is stated that in several instances boys drunk from these fumes have been taken to nearby hospitals.

A large legacy was left by Count Alfred St. Ouen de Pierrecourt to his native city of Rouen on condition that provision be made for propagating a race of giants. The natural heirs began litgation, which has now resulted in an agreement that the city shall found an institute for giants, keeping a large fund in reserve and giving the balance to the legitimate heirs. It is proposed to maintain a score or more of giant couples, establishing workshops for them and conditions favorable for scientists to observe the result in the way of progeny.

On How Little Food Can We Live Well?—Tersely expressed, this is the problem which the Sheffield Scientific Laboratory at New Haven, in co-operation with the War Department, is now endeavoring to solve by means of a thorough course of experiments. Twenty men, under the charge of Assistant Surgeon Lieutenant Wallace De Witt, have been detailed from the hospital corps of the army to take the main part in making the proposed tests, and will be quartered in New Haven during the period required—probably about nine months. This study is not undertaken with reference to any special theories or systems of diet, but with the object of ascertaining whether the majority of persons might not consume a great deal less nutriment than they habitually do, not only without suffering injury, but to their positive improvement in health and strength. Prof. Chittenden, director of the school, is of the opinion that excess in eating is almost universal, and in this, probably, most medical men will agree with him. The object of the study in question is to collect all obtainable facts bearing on this subject.

The investigation is a continuation, on a [illegible] scale, of observations made in the same laboratory last year.

—Professor Morisani, of Naples University, who holds the position of physician to Queen Helena of Italy, is both in stature and proportions the most dimunitive doctor in the world.

The Medical Times.

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NEW YORK, DECEMBER, 1903.

Speech is power: Speech is to persuade, to connect, to compel.—Emerson.

THE EDUCATION OF WOMEN.

THE criticism has often been made that a college education unfits woman for that home-life for which she was intended. Whether this criticism is well-founded or not is still subjudice, although some have accepted the dictum without a question. We are told that there are colleges which take into account in their curriculum the home life of their pupils, and we hope there are, but we firmly believe the majority have no such thought.

There has, however, recently been established in Boston an institution made possible by the will of the late John Simmons, where young women may be trained in the preparation of their own homes. In this college household economics is taught in a manner to provide adequate training for the management of one's own home, or even for the care of an institution.

The curriculum affords instruction which will enable its students to manage a menage, under various circumstances, the private family, the public house or the institution. All will admit, we think, that this is a great step in advance for our girls.

It is not intended, as we understand, that this school shall interfere with the routine of a distinctively literary education, but it is the intention of the teachers to convince and make attractive to their pupils the courses in industrial arts, as related to the problems of life. It is just being realized that it is more necessary to bestow diligence, intelligent practice, and thought upon the subject of household arts, than upon the experiments of the various laboratories of a well-equipped college.

There is, of course, an extensive field open for those who do not require the training for their own homes, in the families of others, and in institutional life. The demand for skilled labor of this class in households and institutions far exceeds the supply, and we are glad to know that it is to become a profession of a high order.

The course of study covers a period of four years, and embraces everything from the chemistry of foods and actual cookery to the study of childhood in all its practical bearings.

Its value is demonstrated by the fact that college graduates, teachers and others who have had practical experience are taking the course. It is said the new college will prepare a young woman for all phases of home life, the intellectual as well as the economic, and already the other colleges for women are attempting imitation. It is to the disgrace of our colleges for girls that they have not long ago instituted methods similar to those adopted by Simmons' College.

The average girl, when she marries, has no intelligent knowledge of what may be reasonably expected of her, in the establishing of her home, and all that depends upon its suitable maintenance.

Many a husband has been alienated and the home wrecked by the pure ignorance of the wife of those things she should have been taught by others. She is not to blame, but the parents and the places of learning, who should have informed her, must bear the responsibility.

Those in the profession who have had experience in the care of our public hospitals, homes, etc., well know the inefficiency of the members of boards composed of women in respect to the culinary department—the very thing they can reasonably be expected to know about. How can it be supposed that a suitable matron or superintendent can be selected, even if one can be found possessing the requisite knowledge, when those upon whom the selection depends are ignorant of the qualifications necessary in such an office? We have never seen a properly constructed menu in an institution in this city, and many have come under our observation. We will not charge the poor, ignorant matron for what she does not know, but we hope the time is coming when we may have a class of competent women for such positions, and we may have to thank John Simmons for it.

MEDICAL AUTHORITIES.

THE Journal of the American Medical Association, at the close of the first six months of 1902, published an index of authors' names, amounting to a trifle over 4,700. The list included all contributors of original articles as well as contributors to other journals, the world over, who had been deemed worthy of mention by the reviewers. Many authorities were credited with several papers; some, on the other hand, of the first rank, had apparently published nothing in the period of time covered. Yet most men engaged in active medical study of the kind that appears in journals, publish at least some minor note of investigation or appear as joint authors with their pupils. Such a list of authorities is, of course, undergoing gradual but steady change, the older men dying, while younger ones are taking their places. Probably, it would be safe to say that what deserves the term "medical authority" at present represents some five thousand writers, and that the list is steadily but slowly increasing.

We believe that there is no one phase of medical work which redounds so much to the credit of the medical profession as its literature and the men who make it. Not only does the medical profession support—and read—more journals and books than any other profession, science, or trade, but we believe that its literature represents more earnest study and more rapid progress than is evinced by any other line of human activity, unless we consider as a unit some

branch of science such as electricity, in which the newness of the field renders possible a considerable number of epoch-making discoveries. But many of the discoveries in the realm of electricity are due to men who may justly be included among medical scholars. The startling and eminently practical advances in bacteriology and in the corresponding field of animal biology, have been due, almost without exception, to strictly medical workers rather than to abstract students of botany or zoology.

Apart from the pride which we may well feel in the gross accomplishment of the medical profession, we may also congratulate ourselves on the fact that medical authority is almost altogether a matter of genuine merit, and that the list of authorites compiled by the Journal of the Americal Medical Association—or by any similar weekly review—is scarcely influenced by prestige, aristocracy or position, but is open to any one who has the ability, time, and opportunity to do good work.

When Robert Koch, as a comparatively young and almost wholly unknown investigator, published his investigations with regard to the tubercle bacillus, he was promptly admitted as an authority of the highest rank, as soon as opportunity had been afforded to test the truth of his assertions. When Robert Koch, the world-famed authority, made a superficial investigation of malaria, ignored the priority of publication by others, less famous, and relied upon his name to assert unsubstantiated dicta regarding the transmission of tuberculosis between man and cattle, he was listened to with respect, but the medical journals and the medical profession rejected his assertions in favor of reports by men who backed them, not by fame, but by facts.

There are, it is true, plenty of toadies who would believe that the moon was made of green cheese if it were so asserted by Welch and Osler, who would reject offhand any novel statement which emanated from a small town or a man who had not demonstrated his own greatness. But Welch and Osler would not assert that the moon was so constituted unless they obtained a piece for careful examination or found an unmistakable spectral line, and they would esteem it no condescension to examine most minutely any evidence, from whatever source, that bore the marks of genuineness. Not long ago, Dr. Welch received from a writer presumably unknown to him a very minor criticism upon one of his masterpieces of scientific work. Not only was the criticism received in good part, but it elicited a personal letter of thanks.

We have heard of medical men whose vanity has been so hypertrophied by the recognition of their prowess that they have assumed the right to dictate their opinions to the profession without submitting their proof of statements, but we have known of no such instances personally, and our experience has been that the greatest minds have been open to conviction, and that a two-cent stamp, or even a courteous question without such inclosure, will put in touch the highest authority and the humblest seeker after knowledge.

We have on record a young medical man who lacked money, social standing, influence, and even a good education. By sheer brain force and industry, he overcame the last obstacle—the other factors never seriously handicapped him or any other worker in our profession—and his first important publication was immediately accorded the positon which his careful labor earned. Such instances are the rule, rather than the exception, and while the momentum of each success naturally and properly facilitates future progress, the profession is ready and even eager to recognize merit and is always critical of the writer, however famous, who attempts to win further recognition simply on the ground of past success.

REPUBLICATION AND JOINT PUBLICATION OF PAPERS AND PRELIMINARY ABSTRACTS.

AT frequent intervals, the profession encounters medical articles jointly published in two or, occasionally, more journals. These same journals also have occasion, once in a while, to censure some contributor for trying to have an article republished, and it very frequently happens that the gist of an article is printed as an abstract, or society report, long before the appearance of the article in its full form. Sometimes the abstract is so brief as to be misleading, sometimes it is really superior to the article in its unabridged form, and one of our contemporaries has lately refused the publication of an accepted article on the ground that a so-called abhad already been printed, consisting of the entire article excepting the introduction and summing up.

As a general rule, almost all editors hold that an article submitted for publication should be published exclusively in one journal, and in this opinion they are upheld by the great majority of readers. Within the last few years many of the weekly journals have taken upon themselves the function of a review, and, while continuing to publish excellent original articles, it often happens that, to the average reader, the chief value of the issue is the information afforded in regard to the current literature. The large amount of space devoted to such reviews practically prevents the monthly journals from following this policy, and it seems to be the tendency of the times to separate the province of the monthly and the weekly journals, making the former more and more the organs for original publication and the latter the channels through which news items and a general review of medical literature are presented to the profession.

The joint publication of medical papers is rarely undertaken except in the case of some epoch-making discovery or a thesis of unusual merit or emanating from some renowned source. Provided that the paper is worthy of this unusual honor and that the terms of publication are fully understood in advance, and that the various journals co-operating arrange for practically simultaneous publication, there is no objection to this method, except that the reader who happens to be a subscriber to both or all that have agreed to a joint publication may feel aggrieved.

Several journals are engaged in what would be called literary piracy, if it were not so straightforward and open. That is to say, they depend very largely upon securing free material by republishing articles from the standard journals. It seems to us that matter which is worth publishing is worth paying for, either in reprints or by honorarium, and that, on general principles, it is better to buy one's literature, like one's clothes and furniture, at first hand. Yet the second-hand journals do no particular harm. The author is usually flattered to have his article reprinted. The first-hand journal does not expect to turn its machinery with water that has passed its

turbines, and the readers of the second-hand journals obtain a better class of reading matter than they otherwise could—but, after all, would they not be wiser to seek their instruction at its source?

Many of our more prominent society meetings are now regularly reported by several weeklies, and such full reports are published that when the original paper finally appears in full it is passed over by many readers as already stale news. We are inclined to believe that this custom has reached an objectionable stage. The preliminary abstract is now too full to be considered as a news item or as an announcement of something to be looked for later, yet it cannot satisfactorily present the work of the author. Many authors encourage this practice for the sake of the suppositious prestige afforded, and even go so far as to comply with requests for advance abstracts, or, not very rarely, they volunteer such abstracts, or, at least, have several copies in their satchels in case the representatives of enterprising journals should ask for them. It seems to us that the best interests of editor and reader demand that nothing more than brief minutes of society proceedings should appear in advance, and that reviewing should be a spontaneous matter with the staff of a journal, dealing with papers only after their publication in full. Yet the complaisance with which authors allow and collaborate in the preparation of reviews of their own papers is, at most, no worse than the tendency which some reviewers manifest to be influenced by the fame of an author and to ignore excellent, original work by men of little note.

IMPROVEMENT IN SLEEPING-CAR METHODS.

ONE of the great American boasts has been for years the fineness of our passenger service on the great trunk lines of the country. Americans are ever ready to vaunt this superiority over European travel with stuffy cars and lack of sleeping-car accommodation. In fact, this is true; the sleeping-car service abroad is ludicrously inadequate; a friend at our elbow says he well remembers going for berths to Paris from Nice and being gravely informed he must register his application and have it acted on in turn. The agent was a little in doubt, but he feared it would be six weeks before a suitable vacancy would occur. Nothing like this, of course, happens in this country, even at its busiest time, but undoubtedly the service is far below what it should be. The expenditure of a little more thought would make the greatest possible difference.

In the first place, the architecture and furnishings of sleeping cars is twenty-five years behind the times. The use of heavy dark woods with cumbrous carvings and hangings is the discard of modern architects, although common in old-fashioned houses of the better sort. The use of heavy plush is another archaic dispensation; this material is ideal for collecting dirt and germs, besides looking suffocating in hot weather. Improvement has been made in the building of the so-called parlor car, especially for seashore use. Light-colored woods, comfortable seats, not enshrouded in plush and a general air of trimness has reached this branch of the service, but not so in the regular through sleeping-car accommodations.

This is of moment to the public and the medical profession. The cars are hard to keep clean, beside naturally affording many refuges for dirt and disease germs. As far as the writer knows, no scientific attempt is ever made to clean these cars. The services of a few tired, over-worked scrubwomen "slick up" the interior of the cars, and a few quick-moving negroes clean the windows. Here the disinfection stops—particularly is this true of the so-called drawing-room or private room at one end of the sleeping-car. This is a natural breeder of disease, for invariably sick people, when traveling, get this room, and nothing is done to clean it. Railroad men know this; a child has been known to acquire diphtheria in one of these rooms, and, on making complaint to the railroad company, the friends were informed that no railroad man would allow his family or friends to occupy such a compartment, as it was well known that these little rooms were frequently full of germs of all kinds. The public and the public press make no complaint on this subject, but it is one that the medical profession should agitate; cars should be built with an idea of scientific cleansing regularly, and at least the present cars should be disinfected especially in the compartments.

Again, as soon as the car is sent on its travels, its ventilation and heating are left absolutely in the care of its negro attendant. This race hates the cold, and consequently the car is overheated continually, and the air is close and foul. We read with a feeling of shame a recent account by two bright Englishwomen of their trip on the Empire State express, in which they describe the conveniences and glories of the trip, but they also agreed that the temperature of the cars and the foulness of the air completely destroyed their pleasure.

These defects are not vital nor inherent in the system. One bright, energetic official in each railroad system could bring about tremendous reform in a month's time. For the safety of the public, this should be done at once. When sick people engage compartments or are put in compartments if taken sick on the train, this should require especial attention from the company with most thorough disinfection and retirement of the car from service for a few days, no matter what was the nature of the disease as reported by the patient or his attendants. We have known cases of scarlet fever and diphtheria to be taken from one point to another, and the car porter was in each case wilfully deceived as to the nature of the disease. In these cases, it is a good working rule to trust no one, for if not actually deceiving ,the patient's attendants may be mistaken. A recent paper was read in Washington on this subject, but it is one that demands wider recognition.

DEMOCRACY AND EDUCATION.

SIR NORMAN LOCKYER, in his presidential address before the British Association, dwelt forcibly on the inferiority of the English universities both in numbers and endowment, as compared with those of Germany and this country. It is a familar criticism that in educational matters, and especially in technical instruction, England undeniably lags in the rear, and Sir Norman holds this backwardness largely responsible for any loss of prestige the United Kingdom has suffered of late in the realm of industry. So serious seemed the emergency to the speaker that he advocated the creation of a Government fund for increasing the brain power of the

nation, and suggested the immediate appropriation of 24,000,000 pounds—the amount of the naval budget for 1889-90—for new buildings and equipment of existing institutions. Of course, such a proposal would hardly be listened to in Parliament. The prospect, therefore, of British science being sustained by Great Britain's purse against foreign competition is not very encouraging. At the same time, "it should not be forgotten" (to quote a paragraph from the "Nation") "that for the last three centuries every single idea of really sovereign pre-eminence in science has been largely of British paternity. And as regards the contributions to material civilization for which the world is indebted to the agency of inventive genius, it is curious to recall how little assistance has been given by a college education to the men who, on either side of the Atlantic, have wrought the greatest revolution in industry, and have by their labors so enormously advanced popular prosperity. Yet it cannot be doubted that if these great inventors had enjoyed better advantages they would have performed their work more easily and effectively, and the world would have been the gainer." Facilities for post graduate technical instruction and for the most extended scientific research in universities cannot, therefore, be too liberally provided, and it is especially desirable that in this land of free institutions the wealh of individuals should be diverted into educational channels.

In England, the highest aim of a prosperous merchant or manufacturer is usually the acquisition of a large landed estate, and ultimately, perhaps, of a title giving him a seat in the national Legislature—or, at least, he aspires to lift himself to a level of social equality with those born aristocrats whom he has been trained to regard with distant veneration. A great American capitalist, on the other hand, is seldom actuated by social or political ambiton, and seeks naturally to benefit by his superfluous wealth the "plain people"—that great body of average citizens from which he sprung, and to which his descendants, he knows, will probably return. Hence the magnificent endowments of libraries and universities in our great commercial and industrial centres. And nowhere, we are proud to say, is the lofty ideal that prompts these unprecedented displays of liberality better realized than in New York. It is fitting that it should be so. As a lay contemporary remarks: "The city that is greatest in material bulk should also be greatest in mind and soul. The city that has most shops and factories should also have most schools and colleges, lecture halls and libraries. The city that is the financial and social capital of the country should also be the educational capital."

A SPECIFIC FOR NURSING SORE MOUTH.

AMONG the chief causes of that excessive infant mortality which, despite the boasted progress of medicine still disgraces our civilization, is the disease known as nursing sore mouth, which afflicts so many mothers during pregnancy and lactation. The complaint, arising as it does from the drain on the maternal system, is usually held to necessitate the weaning of the child, and this, of course, very much diminishes the latter's chances of life. According, however, to the experience of Dr. C. E. Pearl, as related by him in a recent contribution to "American Medicine," there is actually no need whatever, under the above circumstances, of incurring this danger, since the mother's ailment can always be quickly and completely cured by a method so simple as to seem almost obvious when once known. In proof of this assertion he submits the fact that in his locality "no woman has been obliged to wean her child on account of the sore mouth of lactation or to suffer the least inconvenience from the sore mouth of pregnancy during the last ten years." The treatment referred to consists merely in having the mother take cow's milk enough to compensate her for the nourishment she gives the child. "To witness," says the writer, "the prompt and wonderful effect of one or two quarts of fresh milk, taken daily, by one of these patients who persisted in nursing till her system was bankrupt, only deepens my humility at the thought that I, who profess to practice a rational system of medicine, should for so many years have tried to substitute medicine for milk. Occasionally it has been found that the milk of a single cow, especially a young one, has not proved effectual, but in every such instance the patient has been promptly cured when the milk of the herd was substituted. Careful inquiry among physicians who have used this treatment for several years did not show a single failure, all of the patients having been promptly cured by two quarts, or less, of good cows' milk taken daily, in addition to the regular diet. The worst cases are usually cured in two weeks, the essential condition being that they take milk in sufficient quantity of a proper quality. While the foregoing only alludes to the use of fresh cows' milk, it is desirable to have some milk product in a more portable and permanent form for use where fresh cows' milk is not obtainable, and if such a product is not already on the market, it is probable that a reasonable demand would bring one out."

The use of fresh milk for preventing and curing erosion and ulceration of the mucous membranes is, Dr. Pearl thinks, original with himself. If so, the service thus rendered to humanity and the profession can best be acknowledged by giving his discovery the widest possible publicity.

THE ADULTERATION OF FOOD FROM A MEDICAL STANDPOINT.

STATE and Federal governments have taken up the question of food adulteration with intelligent zeal in the past three years. Already much progress has been made in this most complicated subject and the interest is still growing. In Washington we read of the "poison squad," a picturesque term for the band of young men being fed adulterated foods under strict medical care, while in the States of New York and Pennsylvania the State boards of health are actively working to detect food frauds and to educate the public to a proper appreciation of the question.

The elimination of these adulterations must depend on an aroused public opinion, but it is worse than foolish to attempt to excite the public mind by erroneous conceptions of the extent and harmfulness of the frauds. Food adulterations are of many kinds; simply the addition of foreign matter does not constitute an adulteration necessarily; generally the adulteration may be harmless in its effect on the human economy. The idea of poisoned food at once presents itself when this subject is broached to the public, but even if this is not the case, the subject should be as bitterly attacked by the public agents engaged to fight it.

In a general way, as pointed out by Tucker, Director of Bureau of Chemistry, in his recent address at Albany at the conference of sanitary officers, adulteration may be of many kinds. It may consist in the removal of a valuable constituent as cream from milk or fat from chocolate, or, on the other hand, it may be the failure to remove some useless or objectionable constituent as shells from spices or fusel oil in the rectifying of liquors. Again it may be the addition of some cheaper constituent, simply as a makeweight or the addition of some actually harmful substance. These practices are all frauds and the harmless adulterations should be fought as fiercely as the harmful.

Tucker reports encouragingly on the improvement in quality of teas and coffees by the Federal inspection laws; cereal products are now rarely adulterated in this country as they are so cheap that it is impracticable to substitute anything for them—saccharine substance show far less adulterations than formerly; the higher grades are comparatively fine—grape sugar glucose syrup, starch and gelatine are still used in the cheaper grades of confectionery and they are unobjectionable as far as health is considered—Paraffin, clay, sulphate of lime and fusel oil are used but not commonly. Jams, jellies and marmalades are often adulterated, but they are generally wholesome after all. Flavoring extracts are largely adulterated and frequently entirely fictitious—Vanilla extract is especially contaminated, being made from synthetic vainillin and coumarin. Olive oil is another target for the adulterator and a large proportion sold in America is simply cottonseed oil.

When it comes to the subject of adulterated wines, brandies and beers, we find great deception. Dr. Warren, head of the investigation in Pennsylvania recently arrested every prominent brewer in Philadelphia for selling bottled beer, adulterated with boric acid or salicylic acid. Blackberry brandy is another common sufferer; Warren in some sixty samples on the market found scarcely one that was the real article. Low priced whiskey is not whiskey at all but is produced from cologne spirits diluted with water, colored with caramel, flavored with some real whiskey or with essences, sold for the purpose and sweetened with syrup or glycerine. Tucker believes such a concoction is less harmful than new or improperly matured liquors. Dr. Lederle in his investigations has found that this cheap "whiskey" shows a profit sold at three cents a drink of $2.84 a gallon.

Such of the public as wish to get fine whiskey can already do so from bonded warehouses under what is practically a guarantee by the government, for the Bottling in Bond act passed by congress in March, 1897 compels the date of production, name of distiller and location of distillery, proof strength, measure of contents and date of bottling.

When it comes to the practical question of legislating to remove these frauds, we find a difficult, confusing subject to handle properly. Undoubtedly first of all, unnecessary legislation should be avoided; it does a double harm to the producer and to the consumer; we must not hamper honest trade or allow schemers to take advantage of crudely drawn laws. Using the United States Pharmacopoeia as a model, Tucker suggests that the principles applicable to drugs may be extended to foods and in this way we may get precise definitions and standards of purity and strength. It would be well properly not to exclude entirely the use of boric acid, and salicylic acid in certain articles but they should be tested and the quantity to be allowed should be definitely stated and this information should be put on the labels. The experiments being conducted in Washington by Dr. Wiley ought to be very important in this connection. Honest labelling must be required by law; this would place all manufacturers on the same basis and would not force the honest man to lose his profits. In time all manufacturers would welcome such laws.

EXIT DOWIE.

Poor old deluded Dowie has come and gone, and we have not learned of any injury to the mental equilibrium of any citizen of this city. We will admit that there is danger of infection from such an invasion as Dowie's, but we have not heard of any serious attacks of the disease from which he is suffering. The fact is no one took him seriously, and therein lie the safety.

The great majority considered him a charlatan, and a few submitted meekly to his influence. A real religious mania is a terrible affliction and should be guarded against in every way possible; but so far as we know, no cases have resulted in the followers of Dowie or Mrs. Eddy. Religious excitement as well as all other emotions may be dangerous, and should be discouraged, but fortunately the statistics do not show a large percentage of cases from these causes. It is a relief to the city to be rid of the incubus, Dowie!

THE TUNING FORK IN THE DIAGNOSIS OF FRACTURES.

Andrews ("Chicago Med. Recorder"; "Charlotte of giants. The natural heirs began litigation, which Med. Journal") mentions the usefulness of the tuning fork in the diagnosis of fractures, especially of the long bones. The test is made by placing the bell of a stethoscope over the bone near the supposed fracture, where the soft tissues are as thin as possible, and the handle of a tuning fork as close to the bone as possible beyond the supposed seat of fracture. The sound will be transmitted through the shaft of the bone to the stethoscope and through the stethoscope to the ears of the examiner. When the bone is intact, if the test is properly made, the sound of the fork will be heard with great distinctness, but if there is a solution of continuity the sound will either not be heard at all or will be heard very faintly. By comparing the intensity of the sound on the suspected side with the sound heard under similar conditions on the normal side, the question of continuity of bone can be determined. This test for fractures is based upon the fact that bone is an excellent conductor of sound waves, while the soft tissue of the body conducts sound waves very poorly. The bell of the stethoscope should fit tightly to the skin, and when comparing the sound and injured sides the instrument should be placed in the same relative positions. The sound waves will be transmitted through a fracture if the two ends are crowded together; also through a joint, especially if the articular surfaces are forced together.

—Medicine as a profession for women is growing in popularity in London. Women now holding medical degrees in Great Britain number more than five hundred.

BIBLIOGRAPHICAL.

A Manual of Hygiene and Sanitation.—By Seneca Egbert, M. D., Professor of Hygiene in the Medico-Chirurgical College of Philadelphia. New (3d) edition, enlarged and thoroughly revised, in one 12mo. volume of 467 pages, with 86 illustrations. Cloth $2.25 net. Lea Brothers & Co., Publishers. Philadelphia and New York.

The demand which has so soon made possible and necessary a new edition of this work proves two things conclusively—the interest of the profession and laity has been aroused, and the author's success in furnishing a clear, trustworthy and complete resume of his important subject. The author is to be congratulated upon this exceptionally valuable and practical little volume. The present edition has been carefully revised to date, and much important matter added. The growth in size and corresponding cost, has been off-set by the increased demand, so that the publishers have not been obliged to advance the price of the book. The book can be fully commended.

The Physician's Pocket Account Book.—By Dr. J. J. Taylor, is a neat, compact, easily kept and strictly legal book, carried in the pocket, always with you, showing each person's account at a glance. All entries are made but once, on the day when the services are rendered, in plain legal language, and require no posting or further attention.

Our readers will do well to send to The Medical Council 4105 Walnut Street, Philadelphia, for sample page.

General Pathology.—By Dr. Ernst Ziegler, Professor of Pathology, University of Freiburg. Tenth revised edition. Translated and Edited by Aldred Scott Warthin, Ph.D., M. D., Professor of Pathology in the University of Michigan. Royal, 8vo, 784 pages, sumptuously illustrated by 586 engravings in black and many exquisite colors. Muslin, $5.00 net. Leather, $5.75 net. New York. Wm. Wood & Co.

This classical work is so well and favorably known as an accepted authority in its line, that the simple announcement of a tenth edition, showing a radical revision is sufficient. It is not necessary to say it is up-to-date in every respect, and the reputation of its distinguished author, needs no encomium.

This edition has been translated and edited by Prof. Warthin, than whom there is probably no one in this country better fitted for the work. The original text has been rendered in clear and simple English form suitable to the needs of the medical student. No alterations of the subject matter have been made, and the only additions are such as will adapt certain statements the better to their American environment. A feature of this translation is the retention of the bibliographies in full, with the addition of the later American references, in the belief that they would be of the greatest value to the student, as well as giving to the book a completeness which it would otherwise lack.

Many new and colored illustrations also appear in this edition, which leaves little to be desired in the way of mechanical execution. The physical part of the work is in the book-makers highest art.

A Text-Book of the Practice of Medicine.—Designed for the use of Students. By James Magoffin French, M. D. Lecturer on the Theory and Practice of Medicine. Medical College of Ohio. Large 8vo, 800 pages, illustrated by ten full-page plates in black, colors and tints, and fifty wood-engravings. Muslin, $4.00 net; Leather, $4.75 net. New York. Wm. Wood & Co.

There is a growing tendency on the part of authors to realize, that text-books for Students, are becoming too voluminous, and we are glad to note that reform in this direction is well under way.

The author of this book by the employment of a comprehensive and concise style of composition, and the omission of case reports, has succeeded in giving an up-to-date work within reasonable dimensions. The text is well-written in the light of the present, and for many reasons, is ideal for the undergraduate, and as a hand-book. Both the English and Metric Systems of weights, measures and temperatures are given. Part III devoted to clinical methods will be found of great service to the practitioner. The illustrations are good and there is an excellent index. This book may be ordered with confidence, by any who may require a work on the practice of medicine.

Clinical Pathology of the Blood.—A treatise on the General Principles and Special Applications of Hematology. By James Ewing, A. M., M. D. Professor of Pathology in Cornell University Medical College, New York. Second edition, revised and enlarged. Illustrated with forty-three engravings and eighteen colored plates drawn by the author. Lea Brothers & Co. New York and Philadelphia, 1903. pp. 495. Octavo.

The advancement in the study of this subject has been so important both in its clinical and pathological aspects, in the last two years, that the author has found it necessary to issue a Second Edition of his valuable work, in order to make the results of these recent studies available for the student in this department. There are about four hundred references added to the bibliographical lists on various subjects, and several new plates and figures. The book is thoroughly up to the standard and worthy of confidence. The physical part is also all that could be desired.

Lessons on the Eye for the use of Undergraduate Students.—By Frank L. Henderson, M. D. Ophthalmic Surgeon to St. Marys Infirmary, and the Christian Orphans Home; Consulting Oculist to the St. Louis City Hospital, etc., etc. Third Edition, Philadelphia. P. Blakiston's Son & Co., 1903. pp. 205. 12mo.

The title sufficiently describes the scope of this little book, and the author seems to have been successful in producing what he intended. It is a suitable treatise for the average practitioner as well as the under-graduate.

The Practical Medicine Series of Year-Books Comprisng ten volumes on the year's progress in medicine and Surgery, issued monthly under the general Editorial charge of Gustavus P. Head, M. D. vol. X, Skin and Venereal Diseases, Nervous and Mental Diseases, Edited by Drs. W. L. Baum and Hugh T. Patrick. Chicago. The Year Book. Publishers. pp. 236. 12mo.

This series of books is published primarily for the general practitioner, and will be found of special value to him. The present volume follows the line of its predecessors, covering the literature of its subjects

satisfactorily, of course, in a most concise manner, which to many is a desideratum.

Nose and Throat Work for the General Practitioner.—By George L. Richards, M. D., Fellow American Laryngological, Rhinological and Otological Society; Fellow American Otological Society; Associate Editor Annals of Otology, Laryngology and Rhinology; Otologist and Laryngologist Fall River Union Hospital, Fall River, Mass. Price $2.00 Published by International Journal of Surgery Co., N. Y.

This book derives especial importance from the fact that the diseases described therein constitute so large a share of the physician's daily routine of practice. It has been the author's aim to teach the general practitioner how to diagnosticate these cases and how to treat them successfully and according to modern methods. With this object in view every effort has been made to describe the treatment in such detail as to leave no point obscure, and to simplify the technics as much as possible so as to avoid the necessity of an elaborate and expensive armamentarium. No space is occupied with theory, and the information given is based for the most part upon the author's own extensive clincal experience in diseases of the nose and throat. A noteworthy feature of this work is the large number and excellence of the illustrations.

International Clinics.—A quarterly of Illustrated Clinical lectures and especially prepared original articles on the various branches of Medicine and Surgery by leading members of the profession. Edited by A. O. J. Kelly, A. M., M. D. vol III. 1903. Philadelphia. J. B. Lippincott Company. pp. 305.

This classical volume, embracing as contributors some of the best writers in the profession, contains a series of the most interesting papers on "Diseases of the Gall-Bladder and Gall-Ducts." There are also articles on the treatment of pneumonia, gastric cancer, carbonic acid treatment in rectal diseases, and the Serum treatment of typhoid fever, together with a great variety of other matter, largely clinical, which cannot fail to prove interesting and instructive to the reader. No up-to-date library will be complete without this set of year books.

Compend of Gynecology.—By Wm. H. Wells, M. D., Chief of the Gynecological Staff of the Mount Sinai Hospital, Philadelphia, etc., etc. Third Edition revised, enlarged, with 145 Illustrations. Philadelphia, P. Blakiston's Son & Co., 1903. Price 80 cents.

The third edition of this valuable little book has been thoroughly revised and a section on the general therapeutics of gynecology added. Several new operations are described, and the whole subject brought thorougly to date.

The book is excellent for its purpose.

An Epitome of Inorganic Chemistry and Physics.—By A. McGlannan, M. D., of the College of Physicians and Surgeons, Baltimore. 12mo. of 216 pages, Illustrated with 20 Engravings. Cloth, $1.00, net. Lea Brothers & Co., Publishers, Philadelphia and New York.

The author's purpose has been to set forth the accepted and proved facts, that go to form the foundations of the sciences of Inorganic Chemistry and Physics, in a manner which will conduce to clear and easy understanding by students of Medicine, Pharmacy, Dentistry, etc.

As in the other volumes of this series the text is not interrupted with questions, but is continuous for connected reading, with proper headings so that any desired point can be readily found. The valuable features of quizzing are provided for by the questions at the end of each chapter.

For the needs of the student in keeping fully abreast with his medical course, or in preparing for examinations, or for the practitioner who desires quickly to post himself to date, such books are invaluable.

Wathen's Epitome of Histology. A Manual for Students and Physicians.—By John R. Wathen, A.M., M.D., Professor of Surgery, etc., formerly Professor of Histology and Pathology, Kentucky School of Medicine, Louisville, Ky. 12mo., 220 pages, 114 illustrations. Cloth, $1.00, net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1903.

This little volume of well-arranged information presents a compact manual for teaching purposes of great value to the student, and it will not come amiss to the general practitioner. The author's experience in teaching enables him to understand just what is required in such a work.

The Medical News Visiting List for 1904. Embodies the results of long experience. Send for a sample page and see for yourself. Lea Brothers & Co., Publishers, Philadelphia and New York.

Atlas of the External Diseases of the Eye. By Prof. Dr. O. Haab, of Zurich. Second Edition, Thoroughly Revised. Edited, with additions, by G. E. De Schweinitz, A. M., M. D., Professor of Ophthalmology in the University of Pennsylvania. With 98 colored lithographic illustrations on 48 plates ,and 232 pages of text. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Price, $3.00 net.

This Atlas on External Diseases of the Eye forms an excellent companion-book to Professor Haab's "Atlas of Ophthalmoscopy and Ophthalmoscopic Diagnosis," and is just what might be expected from an author of such broad clinical experience and trained observation. Starting with examination of the eye the student is easily and gradually led from one examination to another, thus becoming familiar with the best methods of investigating the eye for the detection of disease. In the chapters of diseases of the eye which follow, the most important diseases are clearly described and the best therapeutic measures recorded. The text has been amply illustrated by a series of beautiful chromo-lithographic plates, to each one of which a clinical history is appended. This second edition has been thoroughly revised and brought down to date, and a number of new chromo-lithographic plates added. As in the first edition, valuable editorial comments are introduced, and references made to many of the modern therapeutic agents.

The Neurological Practice of Medicine; A Cursory Course of Selected Lectures in Neurology, Neuriatry. Psychology and Psychiatry; Applicable to General and Special Practice. With 177 Illustrations. After the Author's Class-Room Methods as a Teacher of Students. Designed for Students and General Practitioners of Medicine and

Surgery. By Charles H. Hughes, M. D., President of the Faculty and Professor of Neurology, Psychiatry and Electrotherapy, Barnes Medical College, St. Louis, Mo., etc., etc. Edited by Marc Ray Hughes, M. D. Hughes & Co., St. Louis, 1903. Octavo pp. 417. Price $3.

The book is plainly and forcefully written in the author's well-known impressive and succinct style. Many of the pages of the book are peculiarly fascinating and eloquent, as well as accurately descriptive and scientific.

The fruitful results of thirty years of extensive clinical experience over a portion of the vast fields of neurology and psychiatry are presented.

CORRESPONDENCE.

MEDICAL UNION IN NEW YORK STATE.

Just before the fall meeting of the State Association, the committee on conference of the State society suggested to the former body the advisability of renewing the past efforts at securing a union of the medical profession of the State. The Association sent a courteous invitation to the society to renew the negotiation which had previously proved futile and showed its good faith by agreeing in advance to the retention of the original title "The Medical Society of the State of New York" for the combined organization. The latter society, unanimously and enthusiastically voted at its meeting a few days after that of the Association, to reappoint its committee on conference, with power to consummate a reunion.

At the present writing, the prospect of attaining the long desired unity of the profession, seems good yet it must not be regarded in too sanguine a light. There is no question but that the rank and file of the profession has long been in favor of a union and, indeed, never desired a double organization. The separation has been forced upon it by its leaders and maintained by them, through their personal and professional influence. To a certain degree, ordinary, and, therefore, dirty politics, has been a factor in the strife, yet it must be admitted that genuine and important issues of polity and principle have existed and have been a far more important factor than any personal and unworthy considerations. Briefly stated, the strength of the society has been its antiquity and the fact that it is an integral part of the machinery of the State government. Indeed, the recognition of the medical profession by the State in 1806 was signally in advance of what might have been expected according to the somewhat condescending estimate which mankind is accustomed to give of its ancestors. On the other hand, the Association has had the great advantage of affiliation with the American Medical Association and, recently, in accordance with a general scheme of professional organization, valuable in itself, has managed to exclude from the latter all persons not holding membership in itself. In addition, while the society has consistently pursued a dignified, laissez faire policy, the younger association has hustled for members and has published directories, maintained a protective department and has resolutely, though, thus far, unsuccessfully fought to destroy the constitutional chartered powers of the society and to secure for itself legal power of an equal degree. In spite of the fact that the society has maintained a considerable balance to its credit and that the association has severely taxed its financial resources, there is no doubt but that under the continued existence of conditions of ten years ago, the latter organization would ultimately have been successful, although it is very doubtful if the society would have been driven out Between two organizations, the one taking the dignified stand that new-comers must apply for membership in county societies in accordance with an old law and wait their turn in becoming members of the State organization by delegation from their county societies, and the other actively canvassing among the younger graduates, working for every possible practical advantage and holding out the inducement of immediate eligibility to State and national affiliation, the latter must surely have succeeded had it not been for a gradual change of professional sentiment.

The actual immediate issue which led to the severance of the State society from the national body which it had itself organized, was the crying need of regulation of medical education. This need existed not only on account of purely ethical and humanitarian considerations, but included the practical problem of indivdual existence which was being threatened by the overcrowding of the profession and by the dispensary and hospital evils which grew out of the inequality between the supply of and the demand for medical services. The society, after repeated legislative rebuffs, was forced to join issues with Homœopaths and Eclectics to secure the desired legislation. It is perfectly true that a minority of the society were influenced by the ideal of ultimate professional unity, but the majority unquestionably realized the present futilty of such an ideal, while, on the other hand, the American Medical Association, in spite of its old code of close communion, was ready to welcome any sectarian who wished to renounce his allegiance to any special medical dogma, and while, in general terms, it denounced consultation with a Sectarian as absurd, its individual members were not absolutely forced to recognize the absurdity of rendering aid to a sick or injured person whose regular attendant was a Sectarian nor the absurdity of accepting a fee from those thus brought to their attention. Thus, the inconsistent spectacle was not infrequently afforded of a physician, excluded from the American Medical Association as unethical because his State society recognized the legal status of Sectarians, and yet unwilling to force a union by conduct which might be considered as officious and self-seeking, and, on the other hand, of one committed to the policy of close communion, yet operating in advertising institutions and seeking homœopathic patronage by reprints and personal effort.

It has been partly the realization of this inconsistency, partly the thorough practicability of the medical education method of New York as tested in that State and in others in which it did not lead to the eviction of the State society from national affiliation, partly the absurdity of holding as unethical, physicians who would be welcome to any gathering in which the issue between Society and Association was not prominent, largely a growing realization of the pettiness of the close communion idea and of the inevitableness of ultimate unity, which has led to a general effort to bring about a realization of this ideal.

In 1902, the leaders of the New York State Medical Association secured the exclusion of all New York

members of the American Medical Association who were not members of the State association. This action, though in accord with the recently adopted by-laws of the national body, was generally regarded as illegal as applied to members already accepted and in good standing, and it was certainly in poor taste in view of the sentiment that State unity was a foregone conclusion and, also, impolitic, as it aroused much indignation both among the impartial members of other State organizations, and among the rank and file of the New York Association, many of whom were loyal—though possibly inconsistent—members of the old society, and most of whom had no patience with the effort to humiliate and to coerce members of the society. Very wisely, the members of the American Medical Association, thus excluded, took their dismissal calmly and the only expressions of indignation heard came from members from other States and from their own nominal opponents. In 1903, by substituting for its code a set of principles of ethics, the American Medical Association removed the sole remaining obstacle to the reaffiliation of the New York Society, with honor to both parties.

We feel sure that the union of the Society and the Association would be quickly effected, if the matter could be put to a popular vote, and we trust that the joint committee of conference will feel that it is the representative and the agent of the New York profession as a whole. It is probably the case, however, that the appointment of committees with power does not signify a sentiment of "Peace at any price." We are better able to estimate the sentiment of the Society than of the Association, yet it is obviously impossible to speak with any degree of positiveness as to how a gathering of many minds may decide under the influence of the past and the present circumstances.

Viewed as impartially as may be, the best interests of the reunited profession of the State demand the preservation, not only of the name, but of the continuous existence and the charter of the Society. The Association has put itself on record so far as the first point is concerned, and the society, last winter, heartily concurred in the refusal of its committee to cede these three points. It would be a temporary triumph for the Association to put the old Society out of existence and to begin again with a new organization, but the moment such a triumph of destruction had been gained, all members of the reunited profession would be equally losers, whether originally members of the Society, of the Association or whether joining de novo. Such a demand on the part of the Association was about as rational—supposing that it was made with any idea of fulfillment—as it would be for the junior of two merging firms to insist upon the burning of all past accounts, the change of name, and the loss of all established reputation. On the other hand, the Society should and, we believe, will be more than willing to accept the admirable scheme of organization of the component parts of the American Medical Association, and to follow, so far as the joint financial strength of the united profession allows, the various enterprises which have been undertaken by the Association. As the officers of the Association have just been elected for a year from October and as those of the Society are changed in January, it would be courteous for the latter body to accept the choice of the former, except that it would be advisable for both treasurers, secretaries and other standing officers to be continued until the affairs of the united bodies have been adjusted.

A. L. BENEDICT, M. D.

Buffalo, N. Y., Nov. 7, 1903.

MEMORIAL ADDRESS ON DR. GUERNSEY.*

Egbert Guernsey, I am convinced, has performed the work which he was destined to accomplish.

The whole design of our Creator has as yet been unfathomed. Existence itself must ever be a mystery, but that there is in contemplation by the Ruler of all a plan, the purpose of which we cannot comprehend, to develop certain conditions of the earth, and at the same time to advance the civilization of mankind, must have given us all moments of profound thought with unsolved conclusions. The subject is too expansive for our physical forces—or all that constitutes human effort.

It is not, therefore, for us to consider the differences of opinion held of a given character when his work has been completed, but rather to calmly review what he has done and to estimate the value of these services, to record the same for future reference and direction in order that we can fulfill our career in line with the intention of our Maker.

Such a career as has just ended must have had its days and years of preparation. It means a life of self-denial; it means an education of temperament to withstand opposition without being crushed; it means that the man must be a philosopher; he must be familiar with the lives of reformers; he must be prepared for repeated defeats and to regain strength rather than to weaken under them. With such an insight into the problems of life and interpretation of character his fireside must ever be free from depression, and good cheer should ever prevail during the various stages allotted to complete the work of the Creator in him.

In the evolution of consecutive problems by the Almighty no one family seems to have been given an heritage, but here and there, from the hovel to the highest walks of life, appears an individual who seems to be chosen for the special purposes which his time and the nature of the place require. Usually the person selected has noticeable gifts, recognizable from early youth by those with whom he comes in contact.

Although an excellent biographical sketch is given of the subject under consideration in the work "Universities and Their Sons," Vol. II., p. 25, it will not be amiss to outline his career in brief, showing the influences which brought about the allotted work of this typical American.

The first of his name in this country, from whom he is directly descended in the sixth generation, was John Guernsey, a native of the Island of Guernsey, who came to America in the earliest colonial days, and, in 1638, was one of one hundred and thirty Puritans to found New Haven, Conn. He was a man of prominence, and no less than thirteen of his descendants served in the Revolutionary War. His great grandson John was born at Woodbury, Conn. His son Noah married Hannah Hollister, a direct descendant of William Clinton, first Earl of Huntington (1350), whose descendant was made Earl of Lincoln, a short time after merged into the Duke of Newcastle. Noah had a son who married Amanda Crosby,

a kinsman of Enoch Crosby, the famous Revolutionary spy.

Egbert Guernsey was the issue of that marriage. He was born July 8, 1823, at Litchfield, Conn., and was educated at Phillips Academy and Yale, where he entered the Scientific Department, and he was finally graduated at the Medical Department of the City of New York in 1846. He was a student during his college course of the famous surgeon, Dr. Valentine Mott.

In 1845, while still an undergraduate in medicine, he became city editor of "The Evening Mirror, associated with Nathaniel P. Willis and George P. Morris. He founded "The Brooklyn Daily Times," in 1848, and for two years was its editor-in-chief. In 1872 he was associated with Dr. A. Gerald Hull in the editing or "Jahr's Manual," and, in 1872, he founded "The Medical Times," of New York. In early life he wrote a school history of the United States which was a text book for many years. His "Domestic Practice," published in 1855, has passed through eleven editions, is a popular book up to the present time, and has been translated into the French, German, Spanish and Danish languages. So far we have given illustrations of a progressive turn of mind; one interested in the literary whirlpool of his day and generation.

In 1846 Dr. Guernsey began the practice of medicine in Williamsburgh, afterwards a part of Brooklyn and now a part of New York, where he was city physician. Two years later he located in New York. He had been educated as an old school physician and surgeon, and began his practice as such. A man of his extensive reading and observation was soon brought in contact with the latest ideas in therapeutics, and being of a liberal turn of mind, nothing could restrain his adoption of the principles, with the soundness of which he was impressed, the results of experimentations proven in his daily practice, and he, therefore, joined the homoeopathic profession. For six years he held the chair, first as professor of "Materia Medica," and then of "Theory and Practice," in the New York Homœopathic Medical College.

In 1870 he organized and was the first president of the Western Dispensary, afterwards united with the Hahnemann Hospital under the name of the "Guernsey Maternity," of which he was also one of the founders.

In 1877 he was largely instrumental in having the Inebriate Asylum on Ward's Island converted into a general hospital under the direction of the Department of Charities, and placed under the control of the homœopathic profession, since which time and up to the termination of his great career he was president of the medical board of the institution, now removed to Blackwell's Island, and which stands as a record of his influence and liberal thought as the Metropolitan Hospital. He was also one of the founders of the first homœopathic State Hospital for the Insane in this country, located at Middletown, N. Y.; was nineteen years a member of the Board of Trustees and four years its vice-president.

He was the founder of the Training School for Nurses at the Hahnemann, Metropolitan and the State Hospital at Middletown, N. Y. He has been president of the Homœopathic Medical Society of the State of New York and of the County Society. In 1864 he enlisted in the Guard of the State of New York, and was the surgeon of the Sixth Regiment until 1868.

Dr. Guernsey was one of the founders of the Union League Club of New York, and was a life member of the New York Geographical and Historical Societies and of the Academy of Science. He received the honorary degree of Doctor of Medicine from the University of the State of New York and Doctor of Laws from the College of St. Francis Xavier.

His marriage to Sarah Lefferts Schenck, in 1848, was peculiarly fortunate in that Mrs. Guernsey seemed to be imbued with humanitarian instincts of an intensity calculated to assist the good doctor in his never-ceasing efforts in that line. Of the five children resulting from this marriage but one survives, Miss Florence Guernsey, and I am sure I voice the sentiment of this society and the profession in New York when I say that her devotion to the interests of humanity in New York in connection with the poor crippled children and other charitable organizations, and the tender care shown to her esteemed and revered parents has endeared her to all her friends and to the citizens of the city in which she lives.

I might theorize by stating that it is quite probable that if our revered friend could speak on the subject referred to he would say that the "Guernsey Maternity" was largely the result of the unity of action of those constituting the happy domestic trio by that name.

Dr. Guernsey passed away as he had lived, cheerfully resigned to the inevitable. His words, "Thank you, dear," for a slight favor rendered a few moments before he felt himself passing away, showed the sweetness of his temperament and the complete resignation and courage of his last moments.

At 12.30 noon, on Saturday, the 19th day of September, 1903, at his summer place in Fishkill-on-Hudson, the spirit left its earthly tabernacle to dwell with its Creator.

The summing up of the important elements of such a magnificent character cannot be otherwise than instructive. The review of his life on this occasion must necessarily be in the nature of a summary, but it is hoped that the references which have been made may bring afresh to our minds the sterling courage, perseverance, and talents, supported by a superior education, which were essential to the successful accomplishment of so much.

Eighty years of the life which has just closed takes us back to 1823. It was in this year that Dr. Gram, of Copenhagen, began his investigations as to the value of homœopathy. Two years later he was satisfied as to its efficacy, and, in 1826, he was the first to introduce it into New York City. We all know that Dr. Gram was not only highly educated, and very successful as a practitioner—having accumulated a competence at the age of forty years—but that his relations with the profession as an old school physician were of the highest, for his uncle was Professor Fenger, the King's physician. The spirit, therefore, which was in the bosoms of the distinguished men who introduced Homœopathy in this country was the spirit of independence which broke away from the throne of Great Britain in our colonial days.

After him Dr. John F. Gray seems to have been his first follower, and many here, possibly with myself, may remember the culture and personal qualities which characterized this distinguished man whose last years were spent at the Fifth Avenue Hotel, New York.

Dr. Abram D. Wilson was the next convert, and he, too, was a scholar, and a physician in full practice, quick to acquire knowledge and of ready comprehension. His conversion was followed by that of Dr. A. Gerald Hull, who was under the instruction of Drs. Gray, Gram, Joslin and other scientific minds.

As you all know, Dr. Hull became a writer on subjects pertaining to Homœopathy, and no man was more efficient with his pen. As an associate of Dr. Hull in editing his Manual, Dr. Guernsey was placed in an atmosphere which must have followed him through life.

All of the men referred to were men of fine education, men of courage, men of independent thought; they were philosophers, scientists and humanitarians. Such a man was Dr. Guernsey. Strong characters require opposition for their development. It is the warfare of an active, independent, earnest life which brings out the latent qualities of hidden manhood and renders the blows effective which ultimately crown our efforts.

It is safe to say, I think, that we are all proud of that grand and kind-hearted gentleman, Dr. Guernsey. We rejoice in the decision which he made in early life to work in the interest of the Homœopathic School. His place is among the great workers with whom we have associated him in the progressive development of our school up to the present time. His talents, both hereditary and acquired, were used to the fullest extent in the line of independent thought. His claim that medical men possessed the prerogative, irrespective of school, to examine and adopt any principles or measures, in whole or in part, which might be used for the benefit of humanity, is now a recognized fact among the profession.

Henceforth the medical profession of New York will have only admiration for the work done by Dr. Guernsey in the interest of medical progress, and when that name—Egbert Guernsey—is mentioned it will be accepted as a synonym for good fellowship, loyalty, higher education, liberty of opinion and action, and, in fact, all that appertains to the high moral or ethical relations of man to man, regardless of wealth or rank. I will bring to mind the earnest logic which he ever was ready to offer when dealing with subjects of unusual interest, and, lastly, it will recall to us that in spite of defeat or failure in regard to subjects under consideration, nothing but the most manly methods were ever entertained for the purpose of accomplishing the desired results.

*By Ex-Surgeon-General M. O. Terry, M. D., Utica, N. Y. Delivered by request of President Irving Townsend, M. D. before the Hom. Med. Society of the County of New York at Chapter 9, Carnegie Hall, Nov. 12, 1903.

A correspondent of the *Edinburgh Review* for August, 1822, said it was lately observed casually that some persons who slept in one of those pestilential spots in Italy under a mosquito net escaped the effect of the miasm, while those unprovided for with this expedient took the disease. The correspondent adds that this is one of the most valuable discoveries in modern times in prophylaxis, but that the explanation that the air breathed and expired by the sleeper acts as an antiseptic, being kept inclosed under the mosquito net is, of course, fanciful and absurd. The true reason is now found to be the keeping out of the tent of the mosquito bearing malaria.

A DOCTOR'S DEGREE FOR $7.50.

We are in receipt of a circular from a College of Optics of the middle West, in which a diploma with the degree of Doctor of Optics is offered for the small sum of seven dollars and a half. We are rather confused as to the educational requirements demanded along with the $7.50, as the course is described in one paragraph as by correspondence, while, in another, it is said to cover "not only the elementary principles of these instruments but a practical drill in handling and using them." Only one text book, at a cost of $1.50 is required and the student is not obliged to buy any instruments. Indeed, among the testimonials is the following statement: "I received my diploma this p. m. I shall continue to study optics and shall provide myself with a trial case as soon as I can." From the fact that a class of 1000 is aimed at, it is obvious that the college can not well supply its students with instruments for the practical work of the course.

Such an institution as this requires little discussion editorially but we would recommend to all State medical societies and educational boards a practical consideration of the question whether such colleges exist or can exist under the law.

There are, however, many points of interest suggested by this enterprise. 1st. Shall the practice of "optics" be divorced from the practice of medicine? This question we have already discussed and answered in the negative in these columns.

2. Is medical legislation best controlled by the State or the nation? The topic is too large to be considered in this place but we may express the opinion that all issues, medical or otherwise which affect the people of the whole country to approximately the same degree and in the same way, should be controlled by the general government. Of course we do not overlook the fact that any such control must be preceded by an assumption of additional powers by the United States.

3. Shall the various doctors' degrees be correlated? At present, according to the maximum legal requirements of the most advanced states, the medical doctorate is just about equal in time requirement to the bachelor's degrees. Until very recently it has been equivalent, in time, to about half of a high school diploma. As to educational equivalents, it is very difficult to compare professional and scholastic degrees. Obviously no institution should be allowed to confer any title or degree on the basis of a brief correspondence course but we imagine that the average college professor, however broad minded, is deterred by courtesy alone from expressing the opinion that there is not much difference between the diploma mill and the approved medical school of a decade ago—or less—which took its students without question as to their preliminary education and made them "doctors" within eighteen months from the beginning of serious instruction in medicine. The question as related to professional schools in good standing under present restrictions, is not of practical importance for, if the doctor of philosophy or science is inclined to look down upon the doctor of medicine or dentistry, he may, with equal justice, despise the doctor of divinity or laws who has been "decorated" solely because of social or political success. Yet it does seem that the title of doctor should be used in one of two senses, either to designate a physician,

according to the popular use of the word in English or to indicate the accomplishment of two or more years of research after the completion of the usual college course leading to a bachelor's degree. Or, again, there is much to be said in favor of the South American custom of applying it to graduates of all professions, including law, engineering, etc., as well as medicine and dentistry.

4. How shall medical practitioners be fitted for specialties? It makes little practical difference whether an otherwise legally qualified practitioner hangs on his wall a diploma stating that he is a Doctor of Optics or some other branch of medicine or one which emanates from a recognized post graduate school and which merely states that he has been found qualified to practice as a specialist or which implicitly declares the same thing. No short course is sufficient for such a purpose, no post graduate medical school can insist upon a course of sufficient length, for the simple reason that very few physicians, once started on their life work, can afford to spare more than a few weeks or a very few months in study at a distance from their practices. While there is no objection to the issuance of certificates of attendance, by post graduate schools, there is very serious objection to the issuance of diplomas of proficiency in any special branch or to the use of such forms as are likely to be used to substantiate such a claim on the part of physicians who are disposed to be unscrupulous. The full discussion of this important problem requires more space than can be devoted to it here.

5. Why should not the correspondence system be regularly employed for post graduate training? Nearly every evil has its roots in a genuine need of a better substitute and post graduate study of some form is absolutely essential to the proper maintenance of a high degree of professional efficiency. Every physician worthy of the name recognizes this fact and the successful existence of medical societies, magazines and books indicates how well the profession as a whole, is meeting its obligation. Several of our magazines have formed the habit of publishing serial articles which aim to present to the profession in practical form the present attainments in some line of medical study. If this plan has been adopted mainly by journals of less prestige than others, it detracts nothing from the need and general excellence of the plan. But it is one thing to place information of this sort before the subscribers of one particular journal and quite another to organize a course of study, with collateral reading and frequent written examinations. Similarly, the heterogeneous make-up of the programs of medical societies might well be supplemented by systematic courses by lecture and experiment, analogous to the university extension courses organized by non-medical scientific societies. Neither correspondence schools nor lecture courses can be compared in efficiency and thoroughness with regular class work in a school, yet they are of considerable value, especially to those who have already had a sufficient training of the formal kind.

Obviously, there is, at present, no organization authorized or able to conduct either correspondence or university extension education in medicine. We must first get farther away from the old business basis of a medical school and must establish a profession of medical teachers who are really teachers and who are not simply utilizing a certain amount of leisure as teachers, while depending mainly for sustenance, upon a medical practice.*

THE CLINIQUE.

INTERESTING POINTS IN ERYSIPELAS.

The last United States census report gives an average death rate of 16 per 100,000 inhabitants, as follows: under five years, 31.34 per 100,000; five to fifteen years 0.81; fifteen to forty-five, 2.80; forty-five to sixty-five, 8.88 and upward from sixty-five years, 38.55, so we see it is a disease fatal in the extremely young and old.

The use of the streptococcic serum has not yet apparently lowered this death rate, for example Marmorell treated 413 cases with injection of serum with a mortality of 3.87 per cent. while in a former series in the same institution without serum injections the mortality was 5.12 which is an unimportant difference.

Allen in a series of 100 cases found that in 50 per cent. some skin defect existed, in nine per cent. the throat, in three a nasal catarrh and in two a lacrymalfistula.

In a complication of 1,880 cases of erysipelas Anders found the average to be 25 days, including complications. At any period of life, according to these observations, the stay in a hospital or the duration of a case in private practice was lengthened almost indefinitely when the patient has been previously in an enfeebled condition on account of chronic disease and when complications existed. The average course was found to be much less in uncomplicated cases occuring in persons under 40 years, which is the time of life corresponding with a preponderating proportion of cases, viz., about fourteen days.

The important practical fact is emphasized that "erysipelas in a typical form is a self-limited disease, that the length of the attack is greatly influenced by the age of the patient per se, its average duration in persons over 50 years being considerably longer than in younger subjects. Sex has no influence in this direction."

In the course of chronic leg ulcers 67 cases of erysipelas occurred; in chonic pulmonary tuberculosis and chronic nephritis, 15 each; in chronic rheumatism, 14; in organic heart disease, 10; in urethral stricture, 6; in syphilis and synovitis, 5 each; in asthma, chronic pleurisy, and chronic alcoholism, 4 each; in bone necrosis, malaria locomotor ataxia senile debility, and puerperal state, 3 each; in typhoid fever and sciatica, 2 each.

Undoubtedly certain conditions and diseases increase the liability to the complaint as pointed out by Anders from a study of a series of 1,674 cases which were analyzed with particular reference to complications. Of the latter there were: abscesses, 105 (of which the following only were classified): of eyelids, 5; abscesses with ulcers, 2; of leg, 3; of foot, 3; of finger, scalp, elbow, glands at angle of jaw, 1 each), rheumatism, 20; pneumonia, 7; catarrhal pnuemonia, 2; plueritis, 7; delirium tremens, 10; delirium, 7; albuminuria, 8; acute nephritis, 3; synovitis, 5; phlibitis, 7; dearrgea, 5; tonsilitis, 3; otitis media, pharyngitis, acute bronchitis, oedema of larynx, 2 each; augina pectoris, iritis, epistaxis, scurvy, hemiglossitis, neuralgia, sciatica, mastoiditis, pyæmia,

endocarditis, eczema, jaundice, paralysis, meningitis, carbuncle, hysteria, apoplexy, insanity, arthritis, diphtheria, followed by leg ulcer and repeated hemorrhages, 1, each. Not a few of the complications which are mentioned by authors of modern text-books and other recent writers as being leading ones are, according to these observations of Anders actually rare. Similarly, same complicating conditions not emphasized in medical literature occur relating frequently and notably to acute articular rheumatism, which is quite frequently associated with erysipelas. According to the above table, it ranks next to abscesses in point of frequency, and that it is present twice as often as delirium tremens, which stands third as to frequency of occurrence. Usually the symptoms of rheumatism followed several days later than the onset of erysipelas.

It has been claimed that the arthritic disturbance is simply symptomatic of a pyæmic condition, and consequently, non-rheumatic; but this latter view can not be correct relative to at least one-half dozen instances in which a detailed description of the symptoms was given. In connection with this, the fact before stated, that in fourteen instances chronic rheumatism preceded the attack and most probably operated as a predisposing factor, should be borne in mind. Pneumonia and pleuritis complicate erycipelas in a small proportion—less than 1 epr cent..—of cases. In some instances pneumonia appeared early, hence it was due, most probably, to a special localization of the specific streptococcus. To such the term "pnuemo-erysipelas" is applied by Anders.

Studying these figures further we see that pnuemonia, both lobar and catarrhal and acute nephritis, as well as pleuritis, may also occur as secondary results. Acute endocarditis was found in only one instance, contrary to the statements of many most recent authors. Meningitis, which was formerly thought to be quite frequent, was present in one instance only, thus corroborating the more modern view for active delirium in this disease points to a severe type of infection, and not, as a rule, to meningitis. Other conditions, supposed to be complications, were regarded as pyæmic indications, such as jaundice, etc. Mastoiditis, otitis, media, tonsilitis, and œema of the glottis may be regarded as secondary developments.

The mortality rate of erysipelas forms an interesting study. All authorities agree that the death rate is exceedingly variable, ranging, according to some writers, from 1 to 50 per cent. These variations, so well verified, can not be denied, but the limits of its diversities have been by many too widely separated. The report collected by Anders gave the number of cases from the different institutions, in which the terminations were recorded, with the number and percentage of deaths for each hospital, as well as the same points with reference to the cases derived from private practice. In these hospital cases the percentage of mortality varied from five per cent. in the Pennsylvania Hospital to eighteen per cent. in Julius Hopkins, while in private practice it was four per cent.

The variations in the percentage of deaths are not so great in the larger individual series, which are composed of sufficient cases on which to base reliable inference. The general average mortality rate, was 6.59 per cent. The private cases gave the lower death rate of 4.16 per cent In the female sex it is 1.5 per cent. lower than in the male, while surgical or traumatic erycipelas has a higher ratio of deaths than indicated by the general average. There were 101 cases classified as purely traumatic, and for thse the percentage of deaths was 14.5.

Chronic illness swells the general average mortality list, the increase being not less than 25 per cent. When occurring in the course of chronic Bright's disease the percentage of deaths ran as high as 40, while in pulmonary tuberculosis it was 30. Abscesses are common in erysipelas cases yet they do not increase the mortality rate. Pneumonia, delirium, delirium trems, and acute nephritis should be classed among the graver complications. Acute rheumatism on the other hand, stands second in frequency, but is comparatively harmless. To account for the increase in the percentage of fatal cases due to acute articular rheumatism we cannot decide definitely.

It is well known that age modifies the mortality. Yet other factors must not be omitted, for it was among middle-aged and old persons that the majority of chronic affections are associated, exerting considerable influence upon the mortality. While on the other hand, the various complications before mentioned are not found more extensively during the late rhan during the younger stages of existence.t Anders comes to the following conclusions:

(a) Typical erysipelas is a self-limited disease, the average duration in patients under 40 years of age being fourteen days.

(b) The duration of the disease was greatly lengthened if either complications were present or chronic affections pre-existed, also if it occurred in persons over 50 years old.

(c) Some chronic affections, such as pulmonary tuberculosis, chronic nephritis, chronic rheumatism, and organic diseases of the heart, increase the susceptibility to the complaint.

(d) Abscesses and acute rheumatism were the most common complications; the rarest meningitis and ulcerative endocarditis.

(e) The general average mortality was 6.57 per cent., while in the cases from private practice it was 4.16 per cent, in persons under 40 years it was only 3.5 per cent, in those over 70 years 46 per cent, and in the traumatic cases 14.5 per cent.

(f) The mortality list was augmented as much as 25 per cent. by the presence of co-existing chronic affections.

(g) The numerous complications also increased the percentage of deaths, and certain of them in an especial degree, notably lobar pnuemonia, acute nephritis, delirium tremens, and active delirium.

(h) Age has a decisive influence upon the mortality after the forty-fifth year, and this effect becoming more pronounced after the sixtieth year.

SIMPLICITY IN MEDICAL TREATMENT.

The value of non-interference with wound surfaces is considerable. The fewer the ligatures we have, the less strangulation of tissue, and the least constant suture that will avoid dead spaces or interfere with the bloodclot organization, the surer the results will be. The estimate of the cost of lives due to neglect of the three precautions in gunshot wounds alone must be appalling. What better treatment than to leave the ball alone, provided it has not taken with it foreign matter in the shape of clothes, and provided no large vessels are wounded or cavities opened in its course as was done in the case of President Mc-

Kinley. Better to have the reporter's opprobium, "the doctor failed to find the ball," than to infect the wound and convert this tract into a pus pocket? It is well to remember not to search for a ball unless there is evidence of complications other than the presence of the ball alone.

Again, taking up simplicity in our work, we find that knots and sutures offered a field filled with complexities. Knots that would embarrass a sailor to tie, are recommended, while sutures bob up and down in surgical literature every month as the writer often puts it. The intestinal suture alone from Raindohr, in 1780, to God knows who the latest is, has been twisted and turned with a surgeon's tag at each twist for more than a century, on an average of ten a decade, and yet the simpler ones survive. Treves, in his excellent work on Operative Surgery, enumerates Dupuytren's Gely's (three stages), Cushing's Lembert's, Czerney's, Halsted's Jobert's etc., and, after weighing their value, says:

"Lembert's suture has stood the test of time, and it may be safely said of it, that it is, on the whole, the best form of suture with which we are acquainted. Why? Its extreme simplicity, the rapidity with which each stitch can be inserted and its undoubted efficiency are points in its favor which all operators have recognized."

Similarly in stopping hemorrhageEsmarch's bandage is a fixture, for it is simple and can be improvised at once by any one. Does any one hear nowadays, except medical students, of Simpson's acupressure, with its three methods of torsoclusion, etc? They exist in text books probably as a test of the enthusiasm of the student as historical curiosities.. One old student was asked by Johnson if he recalled any of the operations for the permanent cure of hernia. He said: "I recall a misty remembrance of labyrinthian sutures and trusses that a fair Rosamond could not unravel." That must be the experience of all who have not looked into the domain of surgery for the last score of years. "As Johnson complains, even in modern books there is a sort of fetich worship in repeating, only to damn those intricate and ineffective inventions; but the end is not yet—the modern methods are too involved. Some need a particular needle, or a pair of them, as in McEwen's; others alter the relation of the cord and put the vas deferens at a more than normally acute angle, possibly reducing its caliber and tending to invalidate the testicle, and as a general evidence that none has reached the desired simplicity each inventor gets better results from his own operation than from his colleague's, or from those who attempt to follow in his footsteps, no matter how lucid the descriptions and graphic the plates. No one method can be rigidly adhered to or be considered all-sufficient, because they lack the staying power of simplicity. The title of surgeon from its derivation indicates that handicraft is one of his endowments, but he must be careful not to let the mechanic run away with the man, or substitute pulleys for common sense.

Roberts on this same subject says:

"A truly wonderfuly illustration of this perversion of mind is found in Bandenheur's Guide to the Treatment of Fractures. I show a single illustration taken from his book in proof of my statement. Could anything be more preposterous than the method by which a patient with an ordinary fracture of the lower end of the radius is here treated? He is shown confined to bed with weights and pulleys attached to his arm and hand, so as to make traction in five different directions. Such a method of dealing with an injury which ordinarily needs scarcely any splint is a travesty of modern surgery.

And then to show how surgeons are prone to multiply good things, he speaks of a case of fracture of the thigh, in which the man had on a Physick's long splint, a Buck's extension and plaster apparatus applied for his single fracture sufficient for three patients with a like injury."

The neighboring parts to an injury are not only as standards of measurement, but can be used as a means of treatment. For example, the upper jaw is an excellent splint for the lower, the side of the body for fracture of the humerus, while the serrated edges of Colles' fracture hold themselves together almost unaided, provided the displacement is properly reduced, better than Bond's and Nelaton's and the most of other splints. Dislocations should be treated simply. The surgeon who invades the junk shop and produces pulleys and ropes is not the great man, but such operators as Bigelow, who found a ready-made pulley in the ligament and turns its mechanism to account.

Barnum once said, "The public love to be humbugged." If wealth were the only reward of the surgeon that dictum might hold good. It is pleasanter to think oneself at death's door with a Latin disease rather than to be well with an ordinary English monosyllable; but, after all, the man who does not yield to such temptations and does not deserve his talents earns eventually the respect of his fellow practitioners and the confidence of his patients. The lying pessimist soon exhausts his Pandora's box of desperate situations and people come to the doctor who will not steal, their sleep by false anxieties, Simplicity before a jury is of inestimable value. The expert who can bring himself down to every day expressions and call a spade a spade gains the attention of the boxful of men. Names again in medicine, should mean something and carry an explanation in themselves. How much more satisfactory and easy to recall in its relations is the sterno cleido mastoid muscle than the valve of Vieusens, because the former means something; the latter is a monument without a description. Such monuments are apt to crumble, as Bright's disease which is really now meaningless.

ACROMEGALY WITH EPILEPSY.*

*Abstract of a paper read before the Chicago Medical Society, Nov. 4th, 1903, by Julius Grinker, M. D.

Pierre Marie described this disease in 1886 under the name acromegaly, which means large extremities. The disease, however, does not confine itself to the extremities. The exact etiology is not known. No race, sex, or age is exempt; it occurs most often between 20 and 40. Previous health history is of no consequence; mental agitation, such as fright, worry, or exposure to cold, alcoholism, may be exciting factors. The disease is very rare. Its pathology is still under discussion. By most writers the disease is called a "torphoneurosis" dependent upon disordered function and structure of the glandular structure of the hypophysis.

Symptoms: The onset is insidious, as a rule, beginning with general weakness, mental hebetude, vasomotor disturbance, polyuria, polydipsia. Later in the course of the disease are found the enlarged extremities, enlarged bones of the face, particularly the

frontal and inferior maxilla, and the other symptoms characteristic of this disease.

Case: Mr. B., captain of a lake boat, age 49, unmarried. Family history, uneventful. No similar case occurred in the entire family. The patient's health history has been good up to beginning of present trouble. He never had any serious sickness. Habits excellent. Of venereal accidents he had gonorrhoea, chancroid and suppurating buboes; never syphilis.

At 25 he was rather slender. At 35 he began to grow stout. No definite time can be given for the beginning of the enlargements in the extremities. It is stated by the different members of the family that the disease lasts in all about eight years. A psychic trauma and vaccination are supposed by the patient to have ushered in the disease. The first symptoms noted were "creepy chilly feelings," followed by a sense of heat and perspiration. These developed into a symptom complex and came on in the same order at long intervals. Later the attacks increased in frequency. From the fact that the identical train of symptoms precede or take the place of the major attacks of epilepsy, from which the patient is now suffering, I conclude that those were attacks of petit-mal. About seven years ago a condition of mental and physical helplessness developed, during which the intellect was clouded and there was a condition of myasthenia. After a few months he gradually emerged from this vegetative state, but sluggishness in physical and mental operation are even now well marked.

About six and a half years ago he developed peculiar crying spells: he sheds tears, his legs tremble, he smacks his lips, says "Oh, my!" and the attack is over. These spells are rather irregular in frequency; some days they come singly; at other days a number of them occur.

Five years ago he had his first attack of epilepsy major. There is the short tonic, followed by the clonic convulsions, during which there is frothing at the mouth, biting of the tongue and relaxation of the vesical sphincter. The sudden loss of consciousness and convulsions are often preceded by an aura identical with the symptoms described as occurring without the convulsions; namely, "creepy" feelings and chilliness in fingers and toes. The major attacks are somewhat checked by treatment, and occur now on the average about once a month. Headaches form a prominent part in his symptoms.

Status praeseus: His posture is peculiar: he presents two well-marked curves: a cervero-dorsal kyphosis and a lower compensating curve at the knees anteriorly. His gait is non-elastic and heavy. The lower jaw is markedly prognatheous and projects considerably beyond the upper maxilla. The lips are large, particularly the lower one. The nasolabial creases have become fissures. The nose is enlarged. The eyes are deeply set and overhung with thickened supraorbital arches on which the eyebrows are unkempt and coarse; the lower part of the forehead is bulging; the cheeks are flattened; the eyes have a dull expression. The hands and fingers are enlarged in all their components: bones, muscles, adipose tissue and skin. The hands resemble spades and the fingers are sausage-shaped; the finger-nails are longitudinally ridged. The feet are similarly enlarged. The abdomen is protuberant; the genitals are atrophied. There are no changes in the ocular fundi; nor is there hemianopia no ocular palsies. Heart and lungs are normal; there is no retro-sternal dullness. There is some tachycardia. The patient's voice is low-pitched, resonant, and has a disagreeable note. Larynx and pharynx not enlarged; but the tongue is excessively so; it measures three inches in width. Dribbling of saliva is present. There is polyura, polydipsia and polyphagia; also excessive perspiration. The thyroid gland is absent. A blood examination reveals an almost normal state of the blood. The urinary examination yields occasional traces of sugar, urates phosphates, nucleo-albumen, but no serum-albumen. Mentally the patient is depressed, somewhat forgetful. Somnolency and weakness are very marked. The nervous examination gives negative findings: motility good; no paralysis or paresis of any kind; no tremors; reflexes are present, but greatly reduced. Pupillary reflexes are normal. There is no ataxia; no sensory disturbances of any kind. The disease has remained stationary for the last six years.

Tis patient is still in the first stage, the *erethic* stage of the disease. It may be many years before the *cachectic* stage will supervene. Treatment with thyroids has had absolutely no effect upon the disease. Bromides have controlled the attacks of epilepsy to a moderate degree.

Conclusion: The case I report is unusual in several features. There is absence of all eye-symptoms, absence of the thyroid gland, and, what is extremely rare, there is presence of epilepsy.

—Baldness afflicts almost every young man who spends any length of time in the Philippines.

UNIVERSITY OF THE STATE OF NEW YORK.

Examination in Chemistry.

1. Define photography. Give the chemistry of photography.
2. Give the formula and name of the product that results when phosphorus is burned in dry air.
3. Write the graphic formula of (a) sulfuric acid, (b) water, (c) nitric acid, (d) marsh-gas, (e) calcium hydrate.
4. Describe the relations of oxygen to combustion and to life.
5. Give the Fahrenheit and the centigrade degree of (a) the freezing-point, (b) the boiling-point.
6. What mineral acids are incompatible with mercurous chloride? Give the formula and synonyms of mercurous chlorid.
7. Describe the appearance of urine containing bile and give tests for the detection of bile in urine.
8. Give the treatment of corrosive sublimate poisoning. Mention an antidote to arsenic poisoning and state how this antidote is prepared.
9. Define fermentation, decompositon, putrefaction. What conditions are necessary to putrefaction?
10. Mention and describe three allotropic forms of carbon.
11. Give the general definition of an ether. How is sulfuric ether obtained?
12. Give the compositon of (a) cane-sugar, (b) grape-sugar, (c) starch.
13. During respiration what chemical changes take place in (a) the air, (b) the blood?
14. Give a test for the detection of hydrocyanic acid in solution.
15. Complete the following equations:

$CH_3Cl + HCl + Zn =$ $2FeCl_3 + H_2S =$

MISCELLANY.

—Professor Pinard is giving a course of lectures on the care of babies before a young ladies' seminary at Paris.

—The remains of a tremendous mammoth have been discovered at Honter, in Hungary. No other specimen has hitherto been found in Europe.

—In the *Dental Record* (London, February, 1903, page 97), four cases of death from swallowing false teeth are noted, all occurring within a few weeks, a very unusual form of epidemic. In three cases the accident happened during sleep; in the fourth it followed a hearty laugh, death resulting quickly from choking.

—According to the *Gazette Medicale de Paris*, there are at the present time five men in Paris over 100 years of age. It is noteworthy that none of these Methuselahs is married. There are 531 nonagenarians, 85 of whom are within a few months of completing their century of life. Of octogenarians there are no fewer than 10,617.

—In cases of prostatic enlargement associated with dribbling of urine, a small quantity of pure spirit of turpentine sprinkled on the patient's dress and on the bedclothes will act as a good deodorant, counteracting the offensive urinous smell to a remarkable degree.

—A case of penetrating wound reported in the *Journal of Tropical Medicine* is of interest on account of its rarity. The sufferer was sitting on the gunwale of a boat and was impaled by a swordfish from the back, the blade projecting anteriorly about three inches, producing a wound of the liver, pancreas, duodenum and intestines, and causing death.

—According to the latest census, China has a population of 426,447,000. Thus the Chinese Empire contains more than a quarter of the inhabitants of the globe, being only approached in this respect by the British Empire, which has a population of 396,000,000, which includes over 231,000,000 in India. Russia comes next, with a population of 129,000,000; then the United States and her dependencies, with 84,000,000; then France and her colonies with 65,000,000, and then Germany and her colonies, with 62,000,000.

—Professor Zakharoff, of the faculty of medicine of Warsaw and director of the veterinary school of that city, is likely to fall a victim to his zeal for scientific research. In making a necropsy of the brain of a dog which had died of rabies, he inflicted a slight cut on one of his fingers, to which he paid no attention. About a fortnight later symptoms of hydrophobia appeared, and he was taken to the Pasteur Institute, which is under the direction of Professor Palmyski. There is said, however, to be no hope of Professor Zarkharoff's recovery.

—A decision of the Prussian Medical Court of Honor in a recent case (*Jour. A. M. A.*) proclaimed that every physician is entitled to undertake treatment of all who apply to him in his office hours without regard to whether they have already consulted another physician or not. Also that there is no ground for a general obligation on the part of the physician that he must inform himself in regard to whether a patient applying is already under treatment of another physician. Only when special circumstances arise that indicate previous application for medical aid is such inquiry called for. When a physician knows that the applying patient is already in the care of another physician, it is obligatory on him to inform the latter that he has taken charge of the case.

—A physician recently brought suit for $10 against a patient treated as a charity case in the Post Graduate School Hospital at Chicago, in the free clinic, who, he afterward discovered, was financially responsible. Judgment was rendered in the physician's favor.

—A correspondent of the *Hospital*, writing from Beyrout, Syria, says: "It is quite astonishing how much more quickly wounds heal here, and reminds one of experiences of the Transvaal war. A peasant on Mount Lebanon was stabbed in the abdomen so badly that all his entrails fell out; he caught them up, put them back, and walked several miles to the nearest doctor, who sewed them up and sent him home, and the man recovered. This is a true story, and I know both the doctor and the man."

—The New York Central Railroad has perfected a hospital and medical system. Contracts have been made with hospitals and physicians in all cities and towns of any prominence along the line of the road. The new system has been adopted so that immediate medical service may be rendered in case of train wrecks or other accidents to employes or passengers.

—A New York correspondent writes that a new adjunct to the elaborate New York residence is the private hospital. Andrew Carnegie's Fifth Avenue palace is provided with this modern convenience, and now the new Burden house, just opposite, in Ninety-first street, is similarly equipped. These home hospitals have all the appliances for emergencies. There are rooms for patients and nurses, and one marble apartment of sanitary construction is ready for operations if necessary.

—The professional man, like others (says the *Canada Lancet*) must live, and must earn a wage. But he has only one quality of service to sell—his best. No matter whether there be any return for that service or not, the service is his best. The true ideal of a profession is that want will be accepted rather than a fee for the performance of any act that is dishonorable, or unprofessional. The army takes high place in the list of professions. Ruskin, the great sage, reaches the true reason when he says of the soldier: "He holds his life at the service of the state. Our estimate of him is on this ultimate fact—of which we are well assured—that, put him in a fortress breach, with all the pleasure of the world behind him and his duty in front of him, he will keep face to the front." Here, then, we have the real essence that must ever distinguish the professions from the trades—service first, wage second.

—The German newspapers have recently announced (*Journ. A. M. A.*) the preliminary preparations for a migrating post-graduate school under the special auspices of the German Government, which shall go from town to town away from the medical centers, carrying with it a museum and sufficient material to be of advantage for instruction and to include among its lecturers some of the leading lights in medicine and surgery in Germany. The idea of this seems to be the better education of the local physicians, who for various obvious reasons cannot take a post-graduate course at the university. The project has the support of the Emperor, and is to perpetuate the name of the Empress Frederick and to be largely supported by Government aid. As we understand it, the instruction is to be gratuitous for such as attend. The plan is a special adaptation of the university extension idea applied to medicine and medical instruction.

INDEX TO VOL. XXXI.

1903.

A

Abdominal operations, diet after. 315
Abscesses, red sulphuret of arsenic for 90
Abstainer, who is an?..... 32
Acidity, gastric, influence of saccharine diet on 125
Acne, pansy tea in..... 27
Acromegaly with epilepsy..... 382
Actinic rays, use of, in minor surgery 218
Actors, consumptive, sanatorium for 126
Addison's disease 253
Cured by Suprarenal extract.. 62
Ague, environment as a cause of. 80
Alcohol as aliment..... 252
From carbonate of lime..... 256
Indigestion 352
Medical profession on 155
Physiologic action of..... 157
Uses of 124
Alcoholics, isolation for..... 288
Alcoholic subjects, operations on. 256
Alcoholism, new treatment for... 222
Aluminum as a whetting agent.. 128
Alumni dinner 26
Amblyopia due to use of common accessories of diet..... 189
Test for 352
American Institute of Homeopathy, meeting of 255
Amputation, immediate, rare 320
Painless of leg, after injection of cocain 335
Anatomy, university examination in 319
Anemics, balloon assensions for. 156
Anesthesia, discovery of..... 128
Ether, prevention of nausea and vomiting following 28
General, antiquity of..... 160
Local 192
Of Drum membrane 29
Private 352
Spinal, new method of..... 80
Anesthetic, local, new..... 160
New 62
Anesthetists, appointment of expert 160
Antisepsis, modern 72
Antitoxin lozenges 352
Antivaccinationist dies of smallpox 355
Anuria, surgical treatment of.... 127
Aortic patients, rhythmical head shaking in 218
Appendicitis complicating pregnancy 202
Fruit seeds and 189
Insurance against 128
Lady operates on her husband for 368
Appetite and digestion, relation between 158
Architects, lectures on sanitation for 192
Arterio-sclerosis, treatment of, with nitro-glycerine..... 333
Asthma, coffee in 218
Astigmatism, cure of, with the knife 95
Ataxia, locomotor, ammonuim chloride in 251
Athletes, vegetarian 124
AURNESS, DR. P. A. Ice bags in pneumonia 89
Aurora Borealis 126
Avenue of trees 233

B

Babies, blood for..... 47
Six, at a birth..... 368
Bacilli, blue rays destructive of.. 32
Bacteria, light from..... 320
Bahamas, the, medical exploration of 352
Banquets a relic of barbaric times 189
Baths, continuous, in surgery.... 186
BENEDICT, DR. A. L. Antiseptic and dietetic treatment of typhoid 207
Shall we tell the truth?..... 184
The Canadian Medical Association 312
Outlying provinces of the digestive specialty 292
The principles of ethics of the A. M. A..... 247
Beneficance of disease 16

BIBLIOGRAPHICALS
American Illustrated Medical Dictionary 347
American Text-Book of Obstetrics 58
American Text-Book of Surgery 345
American Year-Book of Medicine and Surgery 119
Anders, James M. Text-Book of the Practice of Medicine. 344
Bandler, Samuel Wyllis. Uterine and Tubal Gestation.... 183
Bartlett, Clarence. Text-Book of Clinical Medicine; Principles of Diagnosis 59
Barton, Wilfred M. Thesaurus of Medical Words and Phrases 279
Bickham, Warren Stowe. Text-Book of Operative Surgery. 344
Brewer, George Emerson. A Text-Book of Surgery..... 343
Bridge, Norman. Tuberculosis. 215
Buck, Albert H. First Principles of Otology 279
Carleton, Bukk G. Uropoietic Diseases 119
Centenarian, negro 368
Chapman, Henry C. Medical Jurisprudence, insanity and Toxicolology 215
Church, Archibald. Nervous and Mental Diseases..... 346
Code of Hammurabi 184
Davis, Gwilym G. Principles and Practice of Bandaging.. 23
Dearborn, Henry M. Diseases of the Skin 58
Deaver, John B. Surgical Anatomy 153
Dench, Edward Bradford. Diseases of the Ear 343
Diabetes Mellitus: Its Treatment and Cure 24
Dictionary of Medical Science. 347
Dickie, Perry. Hay Fever: Its Prevention and Cure 280
Douglas, Richard. Surgical Diseases of the Abdomen 279
Library, Medical 95
Life insurance examiner, qualications of physician as..... 321

Douglass, M. E. Pearls of Homeopathy 87
Eckley, William T. Manual of Dissection and Practical Anatomy Founded on Gray and Gerrish 24
Egbert, Seneca. Manual of Hygiene and Sanitation..... 374
Eisendrath, David N. A Text-Book of Clinical Anatomy.. 346
Ewing, James. Clinical Pathology of the Blood 374
Eyre, J. W. H. Bacteriological Technique 58
Einhorn, Max. Diseases of the Stomach 153
Flick, Laurence F. What a Layman Should Know About Consumption 343
French, James Magoffin. Practice of Medicine 374
Garrigues, Henry J. Text-Book of the Science and Art of Obstetrics 24
Griffith, J. P. Crozier. Care of the Baby 183
Grindon, Joseph. Diseases of the Skin 23
Grunwald, D. L. Atlas and Epitome of Diseases of the Mouth, Pharynx and Nose. 88
Guenther, Theodore G. Epitome of Physiology 87
Haat, O. Atlas of the External Diseases of the Eye..... 375
Hapgood, Hutchins. Autobiography of a Thief 280
Harrington, Charles. Manual of Practical Hygiene 119
Hatfield, Marcus P. Compend of Diseases of Children.... 88
Henderson, Frank L. Lessons on the Eye 374
Hirst, Barton Cooke. A Text-Book of Obstetrics 345
Holmes, Bayard. Surgical Emergencies 183
Holt, Emmet. Care and Feeding of Children 154
How to Succeed as a Physician 153
Hughes, Charles H. The neurological Practice of Medicine 375
International Clinics, 23, 59, 87, 214, 279, 375
International Medical Annual.. 153
King, A. F. A. Manual of Obstetrics 311
Knight, Charles Huntoon. Diseases of the Nose and Throat 348
MacLeod, J. M. H. Practical Handbook of the Pathology of the Skin 214
Manton, T. P. Manual of Obstetrics 120
Mathews, Joseph McDowell. How to Succeed in the Practice of Medicine 88
Mattison Method in Morphinism 24
May, Charles H. Manual of diseases of the Eye..... 343
McFarland, Joseph A. Text-Book Upon the Pathogenic Bacteria 345
McGlannan, A. Epitome of Inorganic Chemistry and Physics 375
McMurrich, J. Playfair. Development of the Human Body: A Manual of Human Embryology 152
Medical Critic Index Medicus. 184
Mell, P. H. Biological Laboratory Methods 24
Minot, Charles Sedgwick. Laboratory Text-Book of Embryology 152
Muir, Robert. Manual of Bacteriology 119
Neiswanger, Chas. S. Electro-Therapeutical Practice 23
Nobles, Newman T. B. Text-Book of Minor Surgery.... 247
Noorden, Carl Von. Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition.. 152
Nothnagel's Practice 22
Ortel, J. E. Medical Microscopy 23
Oser, L., *et al.* Diseases of the Pancreas, Diseases of the Suprarenal Capsules, and Diseases of the Liver 215
Practical Medical Series of Year-Books, 23, 59, 88, 311, 343
Prevention of Disease 153
Progressive Medicine..88, 119, 247
Pryor, W. R. Gynecology ... 279
Pusey, William Allen. Practical Application of the Roentgen Rays in Therapeutics and Diagnosis 280
Quarterly Journal of Tuberculosis 184
Richards, G. L. Nose and Throat Work for the General Practitioner 280, 375
Riegel, F. Diseases of the Stomach 183
Radcliffe-Crocker, H. Diseases of the Skin 120
Reese, John J. Text-Book of Medical Jurisprudence and Toxicology 23
Robinson, D. H. Latin Grammar of Pharmacy and Medicine 343
Robson, A. W. Mayo. Diseases of the Pancreas and Their Surgical Treatment..... 58
Rockwell, W. H., Jr. Pocket Text-Book of Anatomy 88
Rossiter, Frederick M., and Mary Henry. Story of a Living Temple 24
Sajous, Charles E. DeM. Internal Secretions and the Principles of Medicine..... 154
Simon, Charles E. Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods 215
Schweinitz, De. Text-Book of Diseases of the Eye..... 58
Schmitt, Gustav. Brief of Necroscopy and Its Medico-Legal Relations 23
Schlek, Alfred. Diseases of the Skin 24
Sorotta, J. Atlas and Epitome of Human Histology and Microscopic Anatomy 59
Starr, M. Allen. Organic Nervous Diseases 247
State Commission of Lunacy; 13th Annual Report 119
Stengel, Alfred. A Text-Book of Pathology 344
Stevens, A. A. Text-Book of Modern Materia Medica and Therapeutics 280
Stoney, Emily A. Practical Points in Nursing 183
Swansy, Harry R. Diseases of the Eye and Their Treatment 348
Suter on Refraction 216
System of Physiologic Therapeutics 153
Tanner, Thomas Hawker. Memoranda of Poisons 24
Van Schaick, George Gray. Regional Minor Surgery .. 24
Veasey, Clarence A. Manual of Diseases of the Eye 214
Warren, Stanley Perkins. Principles of Obstetrics 343
Wathen, John R. Epitome of Histology 375
Webster, J. Clarence. A Text-Book of Obstetrics 344
Williams, G. Whitridge. Text-Book of Obstetrics 120
Zeigler, Ernst. General Pathology 374
BIRCHETT, DR. W. G. Uterine Curettage, Its Indications and Technique 228
Birth-Marks, removal of 336
Bite, human, death from 320
BLACKBURN, DR. J. H. Gastric Neurasthenia 303
BLEYER, DR. J. M. Voice Production from a Laryngologist's Point of View 134
Blind, training children born, to see 16
Blood, ascertainment of the source of, by means of serum precipitates 172

Board of Health 94
Of Health, statistics 159
Body, chemical composition of the 223
Brain tumor, removal of 288
Brain, weight of..... 32
BRUBAKER, DR. W. R. Modern Antiseptics 72
Burns, wet salt for 128

C

California, physician as governor of 128
Canadian Medical Association... 311
Cancer, is it contagious?..... 314
Molasses for 288
Of stomach, condurango for.. 91
Its alarming growth..... 126
Value of X-rays in..... 31
Cardiac disease, points in treatment of 6
Cardiac troubles, therapeutic oxygen in 25
CARLTON, DR. J. C. Relation the uterus bears to the mind..... 172
CARTWRIGHT, DR. F. D. Colles' fracture 220
CASEY, DR. T. A. Prevention of Infectious Diseases 129
Catarrh, acute bronchial, associated with acute nephritis.... 254
Intestinal, cuttle-fish bone in treatment of 187
Centenarians in Paris..... 384
Cesarian section 192
Chicago vital statistics..... 127
Childhood, disease as modified by. 9
Children, mother of 62..... 224
Three facts worth knowing about 224
China, founding hospitals in.... 32
Medical college for women in.. 320
Chinese hospital, proposed..... 128
In San Francisco 352
Chloroform dropper, simple..... 192
Chlorosis, marriage and orchitic extract 251
Cholera infantum serum..... 221
Infantum sulpho-carbonate in.. 219
Prophylactic treatment of..... 32
Choleli thiasis, etiological factors in 295
Chorea and rheumatism, relation between 44
Eye-strain as cause of..... 217
Cirrhosis of liver, non-specific... 285
Cleanliness and godliness..... 192
Club, physicians'..... 96
Cocain, fined for distributing.... 288
vs. spermatozoa 64
Coffee, advertisements as to..... 240
Bean, alleged medicinal properties of husk of.....251
Cold, a common..... 348
Cold air and sunshine in capsules of steel and glass 144
Cold in the head 156
Cold water, action of, on stomach 59
COLE, DR. W. C. Malarial fevers. 225
Colonial Medicine, chair of.... 180
Color-blindness, is it preventable? 125
Colors, effects of, on nerves..... 256
Columbia, public lectures at..... 90
Conception, prevention of..... 320
Confinement, what shall we feed women after? 188
Consumption, humor as cure for. 224
Consumptives, new camp for.... 221
Tent city for 96
Contagion theory 224
Coroner, bill to abolish office of.. 32
Corsets, medical defense of..... 319
Coryza, acute, dietetic treatment of 125
Craig Colony prize 95
Cramps, relief for 96
CRAWFORD, DR. J. M. Trachoma. 366
Creamatories 63
CROTHERS, DR. T. D. Medical profession on Alcohol 156
Croup, creosotal in 27
Cryoscopy 186
Clinical value of..... 187
Curettage, uterine, its indications and technique 228
Currency, paper, disinfecting.... 32
Cystitis in women, double catheter for prevention of..... 127
Cysts, mammary, diagnosis of... 367

D

Damages, judgment for..... 288
David, Dr. Jean, at 102..... 320
Death rate, the lowest..... 32
Death, sudden, while singing... 250
DECKER, DR. W. M. Generation and the Law of Sex.....65, 97
Degrees, doctor's, for $7.50..... 379
Denutrition cures of French authors 48
Deodorant for urinous dribbling. 384
Deucher, President 287
Diabetes, diet vs. drugs in..... 208
Diabetic regime 123
Diarrhea, chronic, diet in..... 158
Summer, serum for 320
Travelers' 217
Diatheion 260
Dietetics, capillary 124
Points in 47
Retrospective 47, 124, 157, 188
Diet, relation of, to body surface. 220
Digestive specialty, outlying provinces of 292
Diphtheria, antitoxin in..... 92
Hydrogen dioxide in treatment of 219
Lemon and pineapple juices in. 52
Serum in pastilles 367
Diplomatic life, reminiscences of. 191
Disease, no more, this year than usual 160
Dislocation from sneezing 256
Diuretic, methylene blue as a... 221
DIXON DR. C. H. Suggestive Therapeutics 365
Dressing, a new 92
Drinkers, moderate, embargo on, by railroads 64
Dropsy, sambucus canadensis for 367
"Dry Meal" theory 252
Dust, cottonseed oil, to prevent rising of 32
Dyspepsia—simple remedy..... 47

E

Eclampsia, Bossi s dilator in.... 218
Eczema and erythema as seen by the general practitioner 300
Eddyism in the 16th century.... 159
Edebohls, Dr. G. M., LL.D., for. 274
EDITORIALS:
Abolition of the Office of Coroner 152
Abortive Typhoid 21
A Medical Copernicus? 214
A New Fireproof Material.... 213
A New Laboratory..... 55
A New Outlook for the Medical Student 19
A New Source of Heat and Power 151
A New Treatment of Shock by Control of the Blood Pressure 338
An Improved Method of Percussion 213
A Shorter College Course.... 87
A Sign of the Times..... 278
A Specific for Nursing Sore Mouth 372
Association for the Advancement of Science 49
A Step in the Right Direction. 115
A Theological Prescription.... 56
Bacterial Origin of Paralysis.. 245
Be Sure You Are Right, Then Go Ahead 17
Birth and Death Rates in New York 181
Bloodless Surgery 20
Blood Poisoning 49
Carbolic Acid in Smallpox.... 182
Classification of Diseases..... 277
Color Blindness 36
Convalescent Hospital 245
Danyz's Rat-Virus: Efforts of the United States Government to Destroy Rats..... 54

Decreased Death Rate in New York 56
Democracy and Education.... 371
Diseases Which May Be Confused with Typhoid Fever.. 53
Dr. Lorenz's Fee..... 118
Dr. William Huntingdon Leonard 115
"Dying to Slow Music"..... 340
Egbert Guernsey, M. D., LL.D. 305
Endowing Medical Schools... 84
Etherization of Plants..... 117
Ether or Chloroform?..... 277
Exit Dowie 372
Experiments of the Tuberculosis Commission 341
Expert Medical Testimony.... 113
Fermentation Without Alcohol 86
Gradual Unfolding of Scientific Thought 209
Grape Juice and the Typhoid Bacilli 87
Hepburn Pure Food Bill..... 56
How a Berlin Professor Would Fight Tuberculosis 179
How to Watch the Growth of a Cataract in Your Own Eye. 213
Importance of Microscopic Examination of the Blood in Obscure Diagnosis 18
Improvement in Sleeping-Car Methods 371
Infectious Colds 118
Insanity Experts 340
International Medical Congress 177
Is Appendicitis on the Increase 45
Is Arsenic a Physiological Element? 274
Leprosy 180
Limitations to Practice 212
Man's Place in Nature..... 151
Massage of the Heart in Apparent Death 181
Mechanical Treatment of Whooping-Cough 244
Medical and Labor Organization—The Difference..... 307
Medical Authorities 369
Medical Education 178
Medical Union 337
Metropolitan Hospital 114
Mother Eddy's Latest Backdown 19
National Academy of Sciences. 180
New Discovery in the Microscope 273
Nitric Acid from Ammonia.... 310
Our Present Knowledge of Diabetes Mellitus 149
Oxygen for Milk Fever in Cows 246
Peace and Good Will..... 17
Philippine Climate and Flora.. 341
Principles of Medical Ethics.. 212
Prohibition and the Alcohol Question 140
Railway Hospitals 148
culosis 342
Recent Results from the Injection of Cocain 150
Rejuvenation 182
Relative Value of Medical and Surgical Services 242
Republication and Joint Publication of Papers and Abstracts 370
Salem H. Wales 21
Salt as a Factor in Cancer.... 309
In Cancer 86
Sanitary Considerations of Rural Life 211
Sanosin in Consumption...185, 310
Scientific Study of Brains.... 19
Self Poisoning 113
Self-Protection of the Physician Against Infection..... 83
Serum in Milk 274
Specialism and Post-Graduate Schools in New York..... 80
Smallpox 181
Spider Bite 278
State Care of Consumptives... 82
Surgeon-General's Report..... 337
Technical Schools 273
Tetanus 244
The Adulteration of Food from a Medical Standpoint..... 372
The Apotheosis of Horace Wells 246
The Best Yet 148
The Code Eliminated 178
The Danger of Wood Alcohol. 147
The Development of the Medical School 116
The Enno Sander Prize..... 50
The Education of Women.... 369
The First Steps in Medical Practice 306
The Future of the Profession. 81
The General Practitioner 51
The Naval Museum of Hygiene 210
The New Quackery 339
The Nobel Prize 57
The Rewards of Practice..... 275
The Role of Arsenic in Life.. 85
The Tuning Fork in the Diagnosis of Fractures..... 373
The Use of Chloroform During Labor 85
Tobacco a Mental Assistant... 86
Treatment by Hypodermic Injection 114
Of Morphinism 341
Tumors Destroyed by Injections of Boiling Water..... 20
Typhoid Fever from Impure Water 20
Unfermented Grape Juice 275
Unity and Nature of Matter... 241
Violet Light 57
Vital Force the Result of Electric Forces 118
Vitality Affected by Cold..... 57
Why Use Spectacles?..... 246
Effusion, pleuritic, new sign of.. 90
Eggs, perpetual youth in..... 255
Electric light circuits, shocks from 221
Elements, reducing the number of 336
Ellis, Dr. A. N. Points in the treatment of Cardiac Disease. 6
Endocarditis, chronic, of children, diet in 251
Enema, electric 187
Enuresis and silver nitrate..... 281
Epilepsy, new cause of..... 63
From Explosion 288
Solanum carolinense in..... 27
Eye-treatment of..... 112
Epistaxis, cold water in..... 320
Erysipelas, white vaseline for... 218
Interesting points in..... 380
Esquimaux, oil of..... 64
Ethics, principles of, of American Medical Association..... 247
Euquinine in pediatric practice.. 95
Eyes, examination of, in open air. 224

F

Fee, a large 288
Fees, Dividing 256
Largest on record..... 223
Feet, painful 217
Female government physician... 32
Municipal physician 320
Professor of anatomy 50
Fever, should it be treated?.... 90
Continued 240
Intermittent, cures of 206
Fevers, eruptive 107
Physician sentenced for stealing. 368
Fire escapes as a means of pure air 224
Fish, freezing 222
Fitch, Dr. M. E. Interesting facts in Nervous disease..... 3
Pregnancy, abortion and infanticide 326
Private care of the insane.... 361
Fashes hot eucalyptus for 128
Food and its adulterations, study of 104
On how little can we live well? 368
Foods, concentrated 92
Foot-and-mouth disease 15
Cure for 128
Slaughter of the innocents..... 155
Forham, Dr. T. J. Eruptive Fevers 107
Formaldehyde, antidote for..... 320
Foul air, dangers from..... 185
Fowler, Dr. J. L. Points of Interest to the General Practitioner 68
Fracture, Colles 226
France, statistics of medical incomes in 160
Frazier, Dr. J. M. Membranous Stomatitis 364

French mind, subtleties of..... 288
Fresh air tablets 95
Fumigation, insufficiency of..... 127

G

Gall bladder 287
Stones, chloroform for..... 352
GASSER, DR. H. Physiology of Pain 168, 198
Gelatine, therapeutics of..... 188
Generation and the law of sex.65, 97
Germany, migrating post-graduate schools in..... 384
Giants, institute for breeding... 368
Glands, the ductless..... 190
Glasses, substitute for..... 160
Goitre, hydrastis canadensis in.. 28
GORDON, DR. W. Clinical Notes on Skin Diseases 109
Gorton, David Allyn. On Egbert Guernsey 311
Granular kidney, dietetic treatment of 158
Grape fruit in 64
GRIGGS, DR. A. C. Study of Certain Obstetric Conditions..... 39
Guernsey, Egbert 311
Dr., memorial address on.... 377

H

HALE, DR. T. F. Interesting Complications in Typhoid Fever 161
Hallucination, explanation of.... 160
Harvard Medical School, new buildings for 191
HAYWOOD, DR. H. M. Relation Between Chorea and Rheumatism 44
Healthiest place in this country.. 18
Health officer 126
Resort, fashionable new..... 120
Heart disease, points in..... 35
Disease, points in treatment of. 140
Failure, sign of..... 123
Weak the average 253
Heavy German 288
Height, average, of males..... 128
Hematomata, olive oil in treatment of 218
Hemophilia, gelatin internally in. 336
Treatment of, with calcium chloride 28
Hemorrhage, uncontrollable, adrenalin in 315
Hemorrhoids, anusol in treatment of 156
Hemorrhoids, hot water solution in treatment of 281
Hemostatic, calcium chloride as. 187
Hermaphroditism, unique case of true 320
Herniotomy, cocain 314
Hospital, McKinley 32
Hospitals, antiquity of..... 304
Hospitals, private, in houses of the rich 384
HUNTER, DR. Q. W. Narcolepsy. 329
Hypnotics, study of..... 356
Hypnotism and dentistry 80
German report on 95
Hypodermics, to render them less painful 63
Hysteria in animals 64

I

Identity, personal 325
Idiocy, obstetrical aspects of.... 157
Immigration statistics 191
Impotence, yohimbin in treatment of 123
Infancy, early, feeding in..... 220
Infants, sterilized linen for..... 282
Infectious diseases, prevention of. 129
Influenza, study of..... 106
Injections, painless 288
Ink as a topical application.... 224
Insane, diet for the..... 32
Private care of the..... 361
Reason for decrease in the.... 160
Insanity and hospital management 257
And nervous cases, clinical study of 33
Some statistics of 152
Insomnia, treatment of..... 42
International congress of hygiene and demography 123
Iodopin, action of, on vascular system 95
Iron, dietetic value of..... 92
Itching, hot water for..... 32
Ivy poisoning 127

J

Japanese, cleanliness of 269
Have no ear lobes 32
Journal of Dermatology 134
JOHNSON, DR. G. R., Personal Identity 325
JOHNSON, DR. G. R. Successful Treatment of Gastric Ulcer, with Latest Views on Pathology 193
Jottings from my note book.... 231
JURIM, DR. T. External Use of Salicylic Acid in Diseases of Rheumatic Origin 313

K

Kerosene drunkenness 368
Kidney, contracted, diet in..... 316
Kidneys, diet in acute inflammation of 188
Kissing a misdemeanor 256
Knife-and fork surgery 255

L

Labor, premature, inducing..... 286
Laughter, remarkable cases of... 272
Lectureship, memorial 192
Lemon juice as a disinfectant.... 128
LEONARD, DR. A. M. Study of Food and Its Adulterations... 104
Study of Hypnotics 356
Ligatures, surgery without..... 221
Light as a curative agent..... 281
Lightning, deaths by..... 88
Limestone caves, air from..... 96
Lingua pyramidalis malariæ..... 331
Liquid air factory 304
Price of 179
Liquids, necessity of 32
Lithemia, diet in 252
Live wires, suit protector against. 262
LOFTON, DR. L. Lingua Pyramidalis Malariæ..... 331
Longevity 31
Loom, from the, to the profession 320
Lorenz hospital 256
Louse, head 31
Lumbago, gelsemium in 256

M

MAGAZINER, DR. W. Clinical Study of Insanity and Nervous Cases 33
Malaria and typhoid 63
Malaria, coffee and 62
Crusade against 94
Experiments in infection of man with, thru mosquito bites. 112
Malarial fever, cure for..... 192
Malarial fevers 225
Malignant diseases, unreliability of microscope in diagnosis of.. 159
Malignant growths, X-rays in... 112
Mammoth remains, discovery of. 384
Marriages, consanguineous 64
Massachusetts, legislation in.... 192
Matches, new material for..... 92
Matrimony, certificate of health in 29
vs. Purgatory 191

McCrary, Dr. M. Eczema and Erythema as Seen by the General Practitioner 300
Points in Treatment of Heart Disease 140
Medical considerations 60
History, ancient 243
Union in New York State.... 376
Medicine, prehistoric 31
Recent advances in 130
Memorial Address on Egbert Guernsey 377
Menstrual troubles, permanganate of potassium in 191
Microscope, unreliability of, in diagnosis of malignant disease. 223
Middleton, Dr. J. G. Fashionable new Health Resort..... 120
Milk hygiene, prizes for 320
Milk, sheep vs. cows 64
Sterilization, negative side of.. 282
Miscellany, 32, 64, 96, 128, 160, 192 224, 256, 288, 320, 352, 384
Modesty on stilts 94
Mohammed, was he an epileptic? 342
Morphine habit, hypnotism in .. 187
Mosquito destroyers, fish as.... 336
Disease, another? 319
Of the ancients 64
Mosquitoes, ocimum viride as prophylactic against 219
Oil extermination of, useless. 157
Preference of, for certain colors 191
to keep off 192
Motor locomotion, rapid, intoxicating effect of 320
Mouth breathing at night, control of 250
Muriatic acid for curdling milk.. 64

N

Names, gruesome combination of. 224
Narcolepsy 329
Nausea, ice for 281
Neoferrum 24
Nervous conditions, treatment of. 136
Nervous disease, interesting facts in 3
Nervous subjects, discussion of.. 237
Neuralgia, treatment of, with castor oil 335
Neurasthenia and its treatment.. 188
Gastric 303
Neuritis, multiple, and neuralgias, treatment of 165
New Jersey Way, The..... 312
New York, death rate of..... 288
Journal and *Philadelphia Medical Journal*, consolidation of 255
New Zealand as a health resort.. 187
Nichols, Dr. J. R. Study of Influenza 106
Nose breathing 266
Nose burst into flames..... 256
Nose making 30
Nurses, American, Prof. Lorenz on 191
Female, method of promoting. 192
Proposed licensing and registration of 93

O

Obituary:
Allen, Timothy Field, M. D., LL.D., of New York..... 31
Carnrick, John, of New York. 48
Guernsey, Egbert, M. D., LL. D. 305
Hanford S., Cullen, M.D., of Brooklyn 127
Pardee, Walter, M. D., of New York 127
Thomas, T. Gaillard, M. D., of New York 127
Obstetric conditions, study of certain 191
Odors of cutaneous secretions, suppression of, at moment of fecundation 112
Olive-oil and olives 220
Oothectomy 288
Ophthalmia, fund for investigation of 223
Optic nerve, substitute for 191
Orange before meals 32
Organic extracts 91
Orth, Prof., succeeds Prof. Virchow 64
Osteopaths, state board of..... 32
Other men, the 249
Otology, beer-yeast in..... 250
Oxygenated water as a disinfectant 191
Oxygen, compound 223
From air 256
Oyster, dietetic value of the..... 251

P

Page, Dr. C. E. Foot-and-Mouth Disease; Slaughter of the Innocents 155
Paludism 314
Paracentesis, rule in 150
Paresis, early recognition of..... 157
Paris in Danger 256
Paronychia, operation for..... 281
Parotiditis, epidemic, in girls, involvement of ovaries in 28
Parrots as advertisers 214
Patchen, Dr. G. H. Kinesipathic Treatment of Rectal Diseases 289
Pate de foie gras 92
Pediculosis and scabies, practical points in treatment of.... 78
Peritonitis, chronic, in children.. 353
Tubercular 205
Philadelphia hospital 216
Philanthropist, mysterious 120
Phlebotomy, teaching 157
Photographs by light emitted from human body 255
Photography, lens revolutionizing 26
Phthisis, medical treatment of... 27
Physician, active, at 99..... 128
Physicians, convalescent, home for 265
Placebo, aqueous 223
Plaster, to remove, from hands.. 96
Pneumonia, ice bags in..... 89
Points of interest to general practitioner 68
Points, practical, to be emphasized 296
Policlinic, new 320
Potassium cyanide and unfertilized eggs 220
Practice works wonders 286
Pratt, Dr. J. T. Qualifications of Physician as Life Insurance Examiner 321
Pregnancy, diet in 368
Extra-uterine, in late months, treatment of 29
Abortion and Infanticide as related to medical jurisprudence. 326
Prize, academic 160
Pruritus, lactic acid internally for 251
Prussia, ethical rules for physicians 384
Prussic acid and chloroform.... 315
Pulse phenomenon, neurasthenic. 281
Pustule, malignant, serum treatment of 91

R

Rachitic children, mode of feeding 282
Railroad men, drug habit of.... 224
New York Central, hospital and medical system on..... 384
Railway surgery, history and management of 60
Rats, destruction of..... 96
Reasons why he came to the asylum 31
Rectal diseases, kinesipathic treatment of 289
Rectal feeding 124
Research laboratory 224
Reynolds, Dr. G. R. Treatment of Insomnia 42

Rheumatic diseases, external use of salicylic acid in treatment of. 313
Examination and treatment of. 263
Rickety *vs.* hydrocephalic head. 64
Ringworm and barbers' itch..... 154
"Roast beef hash" 191
ROBINSON, DR. B. What Kills the Surgical Patient?..... 161
ROBINSON, DR. T. R. Tuberculosis and Heart Disease—Two Great Factors of To-day..... 100
Rosalion-Sochalskaia, Mme..... 32
Rubber preservative 256

S

Sabin, Dr. Florence R., prize to 256, 320
Salt baths at home 368
Saltpetre produced from air.... 256
Scarlet fever, serum for cure of.. 126
SCHALL, DR. J. H. Appendicitis Complicating Pregnancy 202
Schism, medical, in New York State 89
Sciatica, hot air treatment of.... 335
Seasickness, Chloretone in..... 281
Experience in 96
Sectarianism, professional, a thing of the past 64
Septicemia 124
Serum, antidiphtheritic, toxic-properties of 64
For old age, Truneck's 315
Service first, wage second, in the professions 384
Seton hospital 223
Sex, production of, at will..... 190
Shaving, antiseptic 255
Sanitary advantages of..... 221
SHELLENBERGER, DR. M. Points in Heart Disease 35
Similarity, ancient healing by... 256
Simplicity in medical treatment. 381
Skin diseases, clinical notes on.. 109
Human, life of 64
Small man, physically 42
Smallpox and chickenpox, differentiation between 64
Morbific agent in 288
To prevent pitting in 182
Socrates, death of 255
Sodium chloride, physiologic uses of 48
SOMMER, DR. H. O. The Other Men 250
Sore Throat, dictating 128
Specialist a specialist, when is a?. 16
Sphincter ani, plastic operation for restoration of, with report of case 159
Sprue, treatment of, by diet. Value of strawberries 283
State Board of Medical Examiners, report of 95
Stenosis, Mitral, difference between cases of 283
Sterility, faculative..... 144
Sterilizing water, method for.... 224
Stomatitis, membranous 364
STOVALL, DR. A. M. Therapeutic uses of Water 12
Strange Tale 48
Street sweeper, dustless 32
Sublamine as a hand disinfectant 208
Substitution 95
Suffering not a source of refinement 320
Supplies for the injured 320
Suprarenal medication, warning concerning 27
Surgery vs. the pulpit..... 336
Surgical patient, what kills the?. 161
Sword-fish, fatal wound inflicted by 384
Synthetic preparations 288
Syphilis, cerebral 332
Diagnosis of 32
Hereditary, sign of 32
Syria, speedy healing of wounds in 384

T

Tapeworm, cocoanut for..... 221
TAYLOR, DR. H. Recent Advances in Medicine 130
Teacup, slaves to the 221
Tea, green, color of..... 64
Teeth, false, death from swallowing 384
The, and digestion 367
Telephone, prescribing by..... 240
Use of, in surgery 31
Temperance society, new..... 144
Temperature, methods of reducing, other than use of cold... 173
TERRY, DR. M. O. Etiological Factors in Choleli thiasis 295
Memorial address on Egbert Guernsey 377
Thalassotherapy, congress of.... 160
Therapeutics, retrospective, 27, 90 123, 156, 180, 217, 250, 281, 314 335, 367
Suggestive, with report of a case 365
Thigh as pincushion 64
Time factor in operations..... 125
Tobacco, chemical treatment of.. 224
Toes, position of, in walking.... 128
Tonics, so-called, inebriates from 258
Tools, bright, for keeping..... 192
Trachoma 366
Triplets, third set of..... 64
Tropics, mortality in..... 160
Truth, shall we tell the?..... 184
Tubercle bacilli found under nails 64
Tubercular hospital 63
Tuberculosis and heart disease—Two great factors of to-day.. 100
Curability of 263
Institution for study of 63
Pulmonary, dietetic treatment of 124
Pulmonary, incipient 251
TURNER, DR. J. S. Insanity and Hospital Management 257
Typhoid, antiseptic and dietetic treatment of 207
Autopsy in interesting case of. 318
Experiments to discover cure for 191
Hygiene and diet in..... 157
Ice cream in 128
New remedy in 28
No drugs in treatment of.... 64
Operation in cases of perforation in 387
Therapeutic fasting in 335
Vaccinium myrtillus in 250

U

Ulcer, gastric, olive oil treatment of 282
Successful treatment of, with latest views on pathology... 193
ULRICH, DR. A. N. Urine and Kidneys in Health and Disease. 76
Uncinariasis and the poor whites. 125
Unhealthy place, the most..... 32
University examination in Physiology and Hygiene 351
In chemistry 383
Unvaccinated persons not allowed to vote 140
Uric acid and urates, meaning of. 218
Urine and kidneys in health and disease 76
Uterine disease, malignant 269
Uterus, relation it bears to mind 172

V

Vaccination, arm-to-arm, a century of 319
Compulsory 96
Fallacy of insusceptibility to... 159
New method of 27
New site for 192
True discoverer of 272

Rheumatism, acute articular, very early diagnosis of 123
Curing, by milk diet..... 316
Diet in 316
Dry hot air in..... 123
Vasomotor ataxia 349
Vegetables, desiccated, nutritive value of 282
Vegetarian eating-houses in Germany 160
Venereal disease 234
Venesection, use of, in proper cases 358
Voice production from a laryngologist's point of view 134
Vomiting in children, forms and treatment of 203
Waiting room, the 96
WARFIELD, DR. C. Nose Breathing 266

W

Water, is it a food?..... 157
Water, muddy, way to clear.... 160
Water, therapeutic uses of..... 12
Unboiled, misdemeanor to drin k..... 320
WAUGH, DR. W. F. Traveler's Diarrhea 217
Weigh baby often 126
White hats for doctors' coachmen 96
Whooping-cough, iodide of ethyl in treatment of 208
Treatment of paroxysms of, by pulling down jaw..... 314
Vaccination antagonizing 31
WILLIAMS, DR. C. Treatment of Nervous Conditions 136
WILLIAMSON, DR. A. R. Discussion of Nervous Subjects..... 235
WILSON, DR. G. R. Curability of Tuberculosis 263
WILSON, DR. G. R. Chronic Peritonitis in Children 353
Windows, disease among 32
Wireless message for ambulance 64
Women, competition of, with men 320
In university of Berne..... 160
Medical, institute of 288
Physicians, dinner to..... 223
Students not allowed 32
Wood alcohol 288
WOOD, DR. J. R. Diatheion.... 260
WORMLEY, DR. W. Disease as Modified by childhood 9
Jottings From My Note Book. 231
Malignant Uterine Disease.... 269
Practical Points to Be Emphasized 296
Treatment of Multiple Neuritis and Neuralgias 165
Use of Venesection in Proper Cases 358
Wrong name, the 126

X

X-ray burn, death from 250
Photography 64

Z

Zakharoff, Professor, accident to. 384

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ORIGINAL ARTICLES.

Chronic Peritonitis in Children. By Geo. R. Wilson, M. D..... 353
A Study of Hypnotics. By A. M. Leonard, M. D..... 356
The Use of Venesection in Proper Cases. By William Wormley, M. D..... 358
The Private Care of the Insane. By M. E. Fitch, M. D..... 361
Membranous Stomatitis Complicating Pneumonia—Eight Cases Reported. By J. M. Frasier, M. D..... 364
Suggestive Therapeutics with Report of Its Action in a Case. By C. H. Dixon, M. D..... 365
Trachoma. By James M. Crawford, M. D..... 366
RETROSPECTIVE THERAPEUTICS 367
Diagnosis of Mammary Cysts—Diphtheria Serum in Pastilles—Sambucus Canadensis for Dropsy—The Teeth and Digestion—Chloride of Sodium in Baths—Six Living Babies at a Birth—A Negro 117 Years Old—Diet in Pregnancy—Removal of an Appendix by a Layman—The French Code of Sanitary Regulations — Condemnation of a Physician for Theft—Intoxication from Kerosene—Propagating a Race of Giants—On How Little Food Can We Live Well?

EDITORIALS.

The Education of Women.. 369
Medical Authorities 369
Republication and Joint Publication of Papers and Preliminary Abstracts 370
Improvement in Sleeping-Car Methods 371
Democracy and Education.. 371
A Specific for Nursing Sore Mouth 372
The Adulteration of Food from a Medical Standpoint 372
Exit Dowie 373
The Tuning Fork in Diagnosis 373
BIBLIOGRAPHICAL 374
A Manual of Hygiene and Sanitation. By Seneca Egbert, M. D.—The Physician's Pocket Account Book. By Dr. J. J. Taylor—General Pathology By Dr. Ernest Ziegler. Translated and Edited by Aldred Scott Warthin, Ph. D., M. D.—A Text Book of the Practice of Medicine. By James Magomn French, M. D.—Clinical Pathology of the Blood. By James Ewing, A. M., M. D.—Lessons on the Eye. By Frank L. Henderson, M. D.—The Practical Medicine Series of Year Books—Nose and Throat Work. By Geo. L. Richards, M. D.—International Clinics — Compend of Gynecology. By Wm. H. Wells, M. D.—An Epitome of Inorganic Chemistry and Physics. By A. McGlannan, M. D. Epitome of Histology. By John R. Wathen, A. M., M. D.—The Medical News Visiting List for 1904—Atlas of the External Diseases of the Eye. By Prof. Dr. O. Haab. Edited by G. E. De Schweinitz, A. M., M. D.—The Neurological Practice of Medicine. By Charles H. Hughes, M. D.
CORRESPONDENCE 376
Medical Union in New York State. By A. L. Benedict, A. M., M. D.—Memorial Address on Dr. Guernsey. By ex-Surgeon General M. O. Terry, M. D.—A Doctor's Degree for $7.50.
CLINIQUE 380
Interesting Points in Erysipelas—Simplicity in Medical Treatment —Acromegaily with Epilepsy.

MISCELLANEOUS.

Diminutive Physician, 368. Women Physicians Increasing, 373. The Mosquito Bearing Malaria, 379. State Examination in Chemistry, 383. Baldness Mammoth Specimen—Judgin the Philippines, 383. ment in Physician's Favor —Some Methuselahs— Deodorant in Prostatic Cases —Healing of Wounds— The Latest Census—A Victim to Scientific Research — Decision of a Medical Court of Honor —Two Women Have Vienna Degrees — Deaths from False Teeth—Impaled by a Swordfish—Railroad Medical System — Hospitals in Private Houses—How to Distinguish Professions from the Trades—Migrating Post-Graduate School 384

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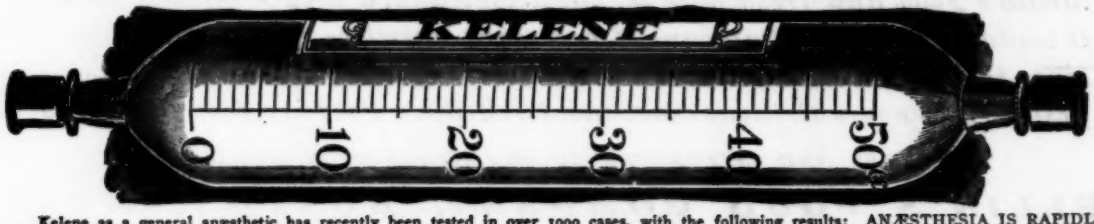

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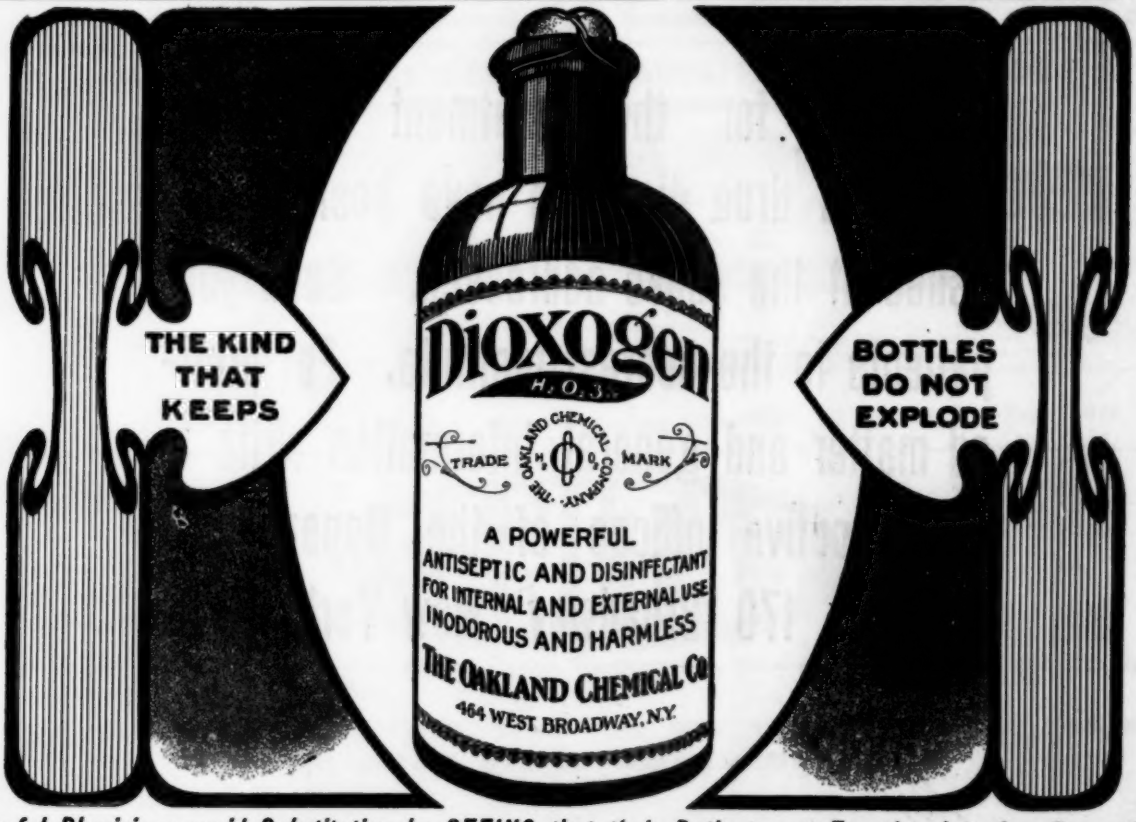

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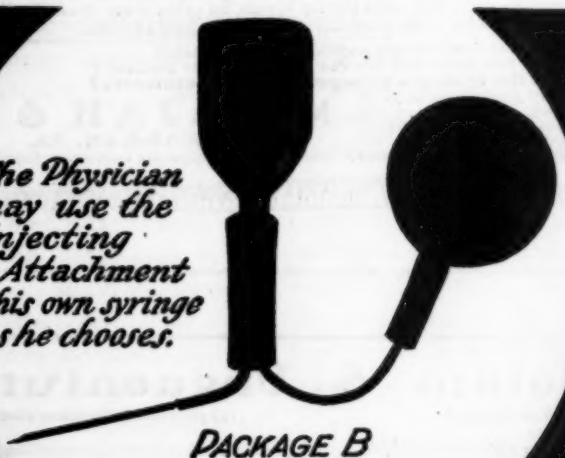

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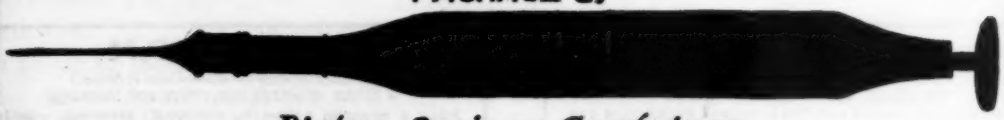

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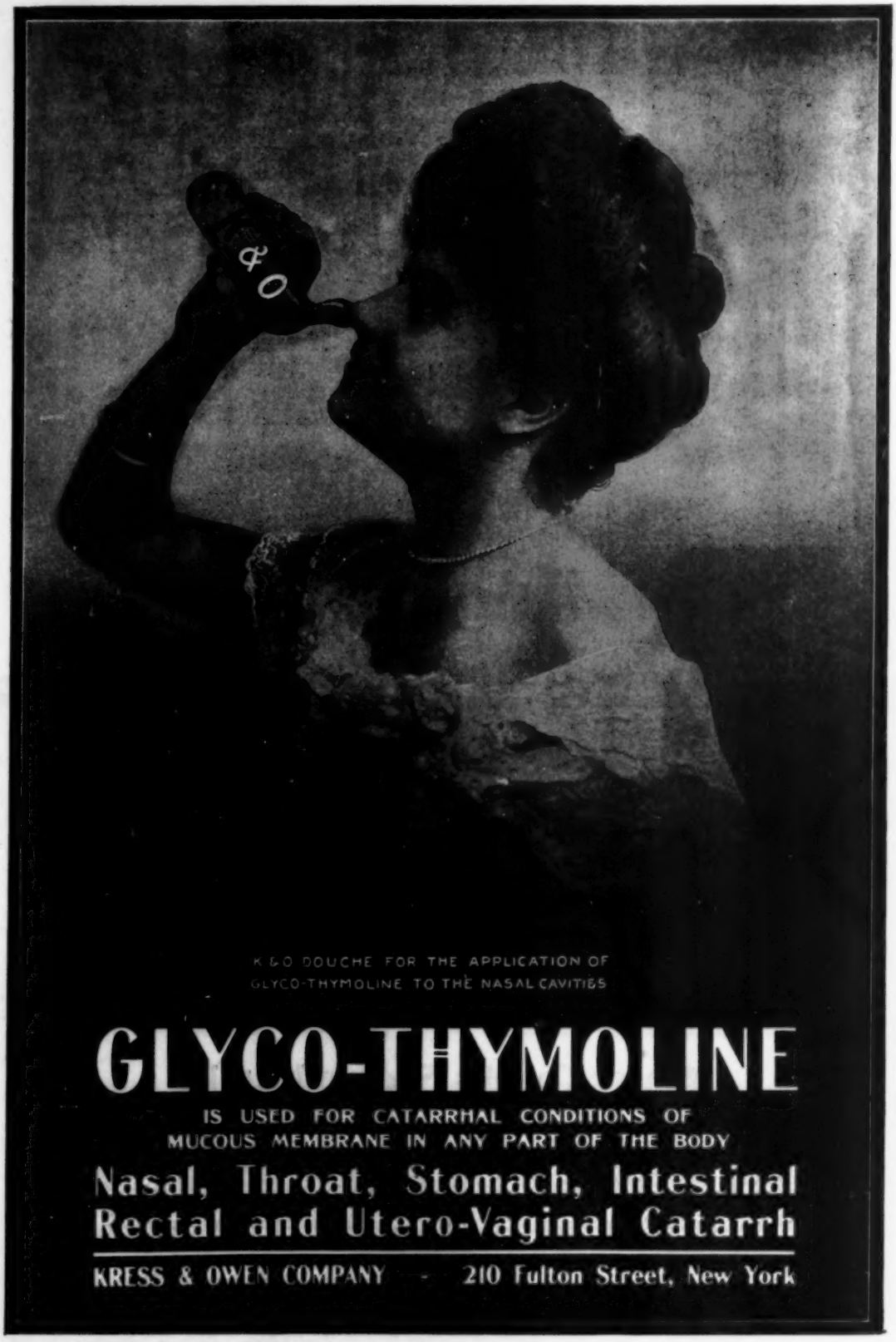
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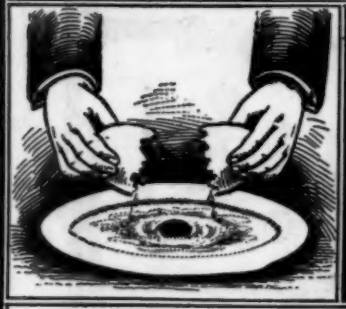

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Break a fresh egg into a saucer (white and yolk together or white alone, as desired), stir well into egg 2 grains Caroid with a spoon; then subject egg to a temperature ranging anywhere between 80° and 130° F. Time (30 minutes) will do the rest.

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Founded on Clinical Experience

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Clinical Reports to Physicians

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Dr. WILLIAM H. DRUMMOND, Professor of Medical Jurisprudence, Bishop's University, Montreal, Canada: "In several cases of **Urinary Calculi, Vesical Irritation,** etc., recently under my care, I have administered **Buffalo Lithia Water with wonderful success.** And in one particular instance, where the patient was suffering most acute pain and distress with forked urinary stream, and all the symptoms of a large Calculus, **entire relief was experienced in eight days**—the disintegrated portion of stone passing away without any difficulty. In this class of cases the **Buffalo Lithia Water certainly has a remarkable effect in breaking up in debris the various masses of stone.** It seems to me that a freer use of this marvelous water would obviate many a case of Lithotomy and Lithotrity.

In the **Acute** and **Chronic Nephritis** of **Gouty** and **Rheumatic Origin,** as well as in graver **Albuminuria** of **Pregnancy,** I have found **Buffalo Lithia Water** to act as a veritable antidote, and I know of no other natural agent possessing this important quality."

Dr. GEORGE BEN JOHNSTON, LL.D., Richmond, Virginia, Ex. Pres. Virginia Medical Society, Prof. of Gynecology and Abdominal Surgery in the Medical College of Virginia. Ex. Pres. Southern Surgical and Gynecological Association, says: "If I were asked what mineral water has the widest range of usefulness, I would unhesitatingly answer, **Buffalo Lithia.** In **Uric Acid Diathesis, Gout, Rheumatism, Lithaemia,** and the like, its beneficial effects are prompt and lasting. ....**Almost any case of Pyelitis and Cystitis will be alleviated by it, and many cured.** I have had evidence of the undoubted **Disintegrating, Solvent** and **Eliminating** powers of this water in **Renal Calculus,** and have known its long continued use to permanently break up the gravel-forming habit."

"In all forms of **Bright's Disease,** except those hopelessly advanced, its good effects are pronounced. I believe it has been the means of prolonging many lives in this trouble."

Dr. Samuel O. L. Potter, A. M., M.R.C.P., London, Professor of the Principles and Practice of Medicine and Clinical Medicine in the College Physicians and Surgeons of San Francisco, California, in his "Hand-Book of Materia Medica, Pharmacy and Therapeutics," in the citation of remedies under the head of **"Chronic Bright's Disease,"** says: "Mineral waters, **especially the Buffalo Lithia Water** of Virginia, has many advocates." Also, under **"Albuminuria."** he says: "**Buffalo Lithia Water** is highly recommended."

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Is acknowledged by the Medical Profession to be the most efficacious preparation for all diseases caused by faulty metabolism, such as: Rheumatism, Arthritis, Gout, Eczema, Diabetes, Dyspepsia, Constipation, Hæmorrhoids, and kindred disorders of the Stomach, Liver, Kidneys and Bladder.

Composed of the Medicinal Ingredients of Europe's celebrated Mineral Springs, it **contains no sugar**, and is, therefore, of special value to the diabetic. It has an exhilarating effect on the system, as it cleanses the entire alimentary and urinary tracts. For this reason it has been found invaluable in Dropsy, on account of its beneficial and immediate action on the kidneys and bowels. Many eminent medical men have reported the most beneficial results in severe cases of Dropsy, even when the water was **thickened to an extent** that it could not be drawn off by the usual method of tapping the patient.

Although in close proximity to the medicinal Spas, the greatest medical authorities have prescribed and recommended KUTNOW'S POWDER as a safe and agreeable substitute. Sir Spencer Wells, M.D., Sir Andrew Clark, M.D., Sir Morell Mackenzie, M.D., and Prof. Lawson Tait, M.D., have given the highest testimony to its sterling merit.

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Buffalo LITHIA WATER

Prof. GIUSEPPE LAPPONI

Physician in Ordinary to the Late POPE LEO XIII. and to His Holiness POPE PIUS X.

Principal Physician of the Hospital of San Giovanni Calibrita (del Fatebene Fratelli) of Rome—Member of the Academy of Rome.

Rome, August 24, 1903.—In the hospital of San Giovanni Calibrita (del Fatebene Fratelli) in Rome, directed by myself, I have largely experimented with the natural mineral water placed in commerce under the name of **BUFFALO LITHIA WATER** and am glad to be able to attest that, by its richness of composition of Lithia, it is of marvelous efficacy, in cases of gout, of chronic, articular, and muscular rheumatism, of hepatic congestions and functional disorders, of gastro-intestinal dyspepsia, of gravel and renal insufficiency, of light nephritic affections and of all the various forms of uric acid diathesis.

The same water is also to be recommended highly in the initial processes of arteriosclerosis and in obstinate forms of bronchial asthma. May also be used as a good table water. So much I declare for the truth.

(Signed) PROF. GIUSEPPE LAPPONI.

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To obtain immediate results in

Anaemia, Neurasthenia, Bronchitis, Influenza, Pulmonary Tuberculosis, and during Convalesence after exhausting diseases employ

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SELECTIONS.

"The Relation of the Medical Department to the Health of Armies" is the subject for the Enno Sander Prize for 1904. For particulars address Dr. Jas. E. Pilcher, Carlisle, Pa.

"The Pathology of the Typhoid Ulcer," with unusually handsome colored plates illustrating the various stages of ulceration and cicatrization, has been issued in booklet form by the Arlington Chemical Co. of Yonkers, N. Y., a copy of which may be obtained by any of our readers upon application and mention of this journal.

Thialion performs a four-fold function, all of which tend to help the patient. First, it acts thoroughly on the bowels, increasing peristalsis. Second, it relieves the torpid condition of the liver, increasing the flow of bile. Third, it acts on the kidneys, increasing the quantity of urine voided, and, fourth, it eliminates the uric acid from the body.

In ulcerations of the uterus most excellent results follow the use of Medicated Uterine Wafers (Micajah & Co.). A careful analysis of the various special methods of therapeutic treatment used by successful gynecologists the world over shows that they are but varied ways of accomplishing three necessary changes of condition. 1. Equalize the circulation of the pelvis. 2. Stimulate absorption and excretion. 3. Tone up the muscular tissue, all the time keeping the genital canal as clean as possible. The use of the hot water douche in connection with these Medicated Uterine Wafers seems to fulfill every requirement of the ideal method.

A bill has been introduced simultaneously in the Senate and in the House, granting third class rates of postage to all manuscripts of books or articles for publication, original drawings, music scores, manuscript sermons and tasks of pupils, corrected without comment of the teacher.

Saunders' illustrated catalogue of medical and surgical books, just issued, cannot fail to interest any prospective buyer. There will be found here a description of many new and valuable publications of this enterprising house. A copy may be had by mentioning this journal to W. B. Saunders & Co., Philadelphia, New York and London.

As a remedy in diseases of the mucous surfaces, S. H. Kennedy's Extract of Pinus Canadensis has successfully passed through the crucial test of practical experience. Recent observers have given it a place far in advance of that class of mineral astringents which have hitherto held a front rank in the treatment of mucous discharges, especially vaginal and urethral," sores, ulcers, piles, sore throat, nasal catarrh, dysentery, diarrhea, and hemorrhages. While not altogether a new remedy, medical text-books have, nevertheless, thus far considered it in a very brief and cursory manner, and the great favor it now enjoys among those who have used it has not yet extended, we believe, throughout the medical profession in its entireness. A knowledge of its merits should be, therefore, more thoroughly disseminated, since an intimate acquaintance with its virtues means an improved method of treatment of diseases heretofore particularly obstinate and intractable.

Continued on page xix.

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A perfect ointment that is thoroughly efficient as an **Antipruritic, Antiseptic, Local Antiphlogistic and Skin Nutrient.** And is now being successfully used and prescribed by over 75,000 PHYSICIANS in the United States, Canada and Great Britain.

For Eczema, Erysipelas, Pruritus, and all Itching and Inflammatory Skin Diseases.

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In each tablet.
A VALUABLE TONIC

TONO SUMBUL CORDIAL
THE IDEAL TONIC
12 oz. bottles only
FOR
PHYSICIANS' PRESCRIPTIONS

PIL. SEDATIVE
WARNER

℞ Ext. Sumbul, 1-2 gr. Ext. Valerian. 1-2 gr.
Ext. Henbane, 1-2 gr.
Ext. Cannab. Ind. 1-10 gr.
In each Pill.
A VALUABLE SEDATIVE

Specify Warner & Co. when you precribe and avoid disappointments

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Royal Baking Powder vesiculates the dough by mechanical means, without fermentation, and in no way affects or changes the constituents of the flour. There is no destruction of the gluten or sugar, but all those elements are preserved which are intended by nature, when combined in our bread, to make it literally "the staff of life."

Fresh bread, cake, biscuit, griddle-cakes, etc., raised with Royal Baking Powder, may be eaten with impunity by persons of dyspeptic tendencies or the most sensitive stomachs.

Food for the sick requiring to be leavened is made perfectly wholesome and more nutritious by the Royal Baking Powder than by any other vesiculating agent.

Careful Physicians avoid Substitution by SEEING that their Patients get Exactly what they Prescribe

SELECTIONS.

Dr. F. Gurney Stubbs was elected a Professor of Otolaryngology in the Chicago Eye, Ear, Nose and Throat College, Oct. 9th, 1903.

The New York Medical Gymnastic and Massage Society desires to announce that a clinic is in operation under its auspices for medical gymnastic or massage treatment at 210 East 41st street. Hours, 11 a. m. to 3 p. m.

The President of the Medical Society of the State of New York has appointed the following business committee to prepare a programme for the annual meeting, January 26-28, 1904: Dr. H. A. Fairbairn, of Brooklyn; Dr. G. R. Butler, of Brooklyn, and Dr. Andrew MacFarlane, of Albany. F. C. Curtis, secretary, 17 Washington avenue, Albany, N. Y.

Dr. G. Campanella confirms the excellent results obtained with iodipin in various affections by numerous investigators. A case of chronic pleurisy, following pleurisy with effusion, which showed practically no improvement under large doses of potassium iodide and painting with tincture of iodine, was completely cured by the administration of iodipin.

Dr. Honigschmied reports several additional cases (see Archives, April, 1903, p. 136) in which he used bromipin with striking results. One case was that of a run-down, sickly anemic woman, suffering with gastric ulcer, chronic endometritis, and leucorrhea. Attempts to take food were followed by vomiting; the latter, however, also came on spontaneously, and occasionally the vomited matter consisted of pure blood. She also had frequent fainting spells. Other symptoms were insomnia, constipation, palpitation of the heart with great weakness, and thready pulse. The author recommends bromipin very highly as superior to the bromides and free from the danger of causing bromism; but he advises to start at once with high doses—4 or 5 drams, whether given per os or rectally.

Dr. Jos. E. Greenberg, New York City, reports the following case: Young man, 18 years of age, was accidentally hit in the eye with a piece of iron. Inflammation within twenty-four hours had spread to surrounding tissue, infiltrating membrane of conjunctiva and by sympathy extending to the other eye. Case had been under treatment for six weeks when the patient was told he must lose his right eye. I was then called in. The case looked hopeless; the eye and area around it, all the membranes and lids were a mass of inflammation covered with pus; so intense was the inflammation that the point of injury could not be found. Before deciding to operate, ordered the patient to bathe inflamed area every hour with a 10 per cent. solution of Glyco-Thymoline and warm water, and to keep the eyes covered with a Glyco-Thymoline compress. The next day the inflammation was appreciably reduced, so much so that I could diagnose the case as a severe ulcer of the cornea. He continued with the Glyco-Thymoline washing; the pus formation was checked in forty-eight hours. Treatment was continued four days, when the bathing was reduced to every four hours. In eleven days the young man was back at work, and in sixteen days discharged as cured. The rapidity with which Glyco-Thymoline reduced the active inflammation was remarkable.

Dr. W. S. Gottheil says sublamine is the most effective treatment for parasitic scalp diseases. Dr. Joseph Imre claims it as the best conjunctival disinfectant.

The Cultivation of Medicinal Plants.—Dr. Rodney H. True, of the United States Department of Agriculture, gave an address recently at the College of Pharmacy on this subject, and illustrated it with more than a hundred specimens raised on the special farms of the Department in Washington, Texas, and Vermont.

Ichthalbin acts both as an alterative and as an intestinal disinfectant. Its great value in chronic intestinal catarrh is commented upon by Dr. Porcelli, of the Ospedale Consodziale in Bari. The cases to which the ichthalbin was administered presented well defined symptoms of chronic enteritis; borborygmi, tympanites, pain in the bowels, irregular liquid discharges, etc.

Alterative Dressings.—Cells, like individuals, says Dr. Stuart McGuire, sometimes, without assignable reason, develop disturbances of nutrition requiring alterative treatment. In the management of a granulating wound there is often call for local medication. Experience alone can teach the surgeon the agent to employ and the time and method of its application. Nitrate of silver, mercurial ointment, chloride of zinc and sulphate of copper are all useful and time-honored remedies. Among newer preparations must be mentioned protonuclein. I have several times seen indolent or foul granulating areas that had defied a half dozen other lines of treatment improve under its use as if by magic.

Winter Excursion Tickets.—The Southern Railway announces winter excursion tickets now on sale to the health and pleasure resorts of the South, where the tourist or the invalid may avoid the rigors of Northern climate, enjoying the perpetual comforts of a Southern climate. The service offered by the Southern Railway is of the very highest class, and it reaches all the principal resorts of the Carolinas, Georgia, Florida, Louisiana, Texas, Mexico and the Pacific Coast. Through Pullman drawing room sleeping cars and dining car service on all through trains. Write for descriptive matter of the resorts reached by this great railway system. New York offices, 271 and 1185 Broadway. Alex. S. Thweatt, Eastern Passenger Agent.

Epilepsy.—Report of Dr. Willis P. King, Kansas City, Mo.: Mr. X.., age 39. Farmer. When six years of age had a fall, which was followed by unconsciousness. Twelve years later experienced his first epileptic seizure. Seizures had increased in frequency and severity until about five months ago, when patient presented himself for treatment. He was having his paroxysms every other day. Was extremely despondent and had suicidal intentions. Began the use of the R. H. Lymph-Compound in 11-drop doses twice daily, rapidly increasing dosage to 14 drops. Patient had no seizures from the third to the tenth day of treatment. The dose of Lymph-Compound was then reduced to 8 drops twice daily, and gradually increased to 10 drops, this dosage being maintained for 86 days. Patient has had no seizure since tenth day of treatment. Over three months have now elapsed since treatment was discontinued, and the patient is apparently well.

Continued from page xvii.

The Diet in Consumption

Here is a man who has tried nearly every form of cod-liver oil, including the plain oil. His stomach will tolerate none of them. He can eat but little food and continues to lose weight and strength. What shall be done with him?

Prescribe Hydroleine. It will stay down. It will give him an appetite, improve his digestion; his color will become better—showing that new blood is being created; sleep will be less disturbed and he will gain in weight and strength.

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Is daily making converts among physicians for its wonderful work in

Inflammatory and Contagious Diseases of the Alimentary Canal.

It is the rational treatment in Gastric and Intestinal Disorders, such as Dyspepsia, Gastritis, Gastric Ulcer and all Contagious and Inflammatory Diseases of the Stomach and Intestines.

Full particulars with clinical reports on cases—in my book: "The Therapeutical Applications of Hydrozone and Glycozone"; Seventeenth Edition, 332 pages. Sent free to physicians on request.

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At this critical stage of genital involution H. V. C. is of the greatest importance. Its sedative action upon the pelvic nerve centers, modifies and relieves those conditions so characteristically manifested at this period.

A WARNING

The enviable reputation of the Viburnum Compound of Dr. Hayden, H. V. C., in the treatment of diseases of women, has encouraged unscrupulous manufacturers to imitate this time-tried remedy. If you desire results, you must use the genuine only—beware of substitution.

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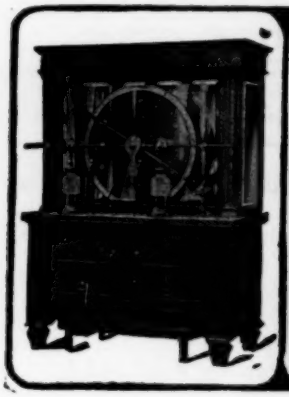

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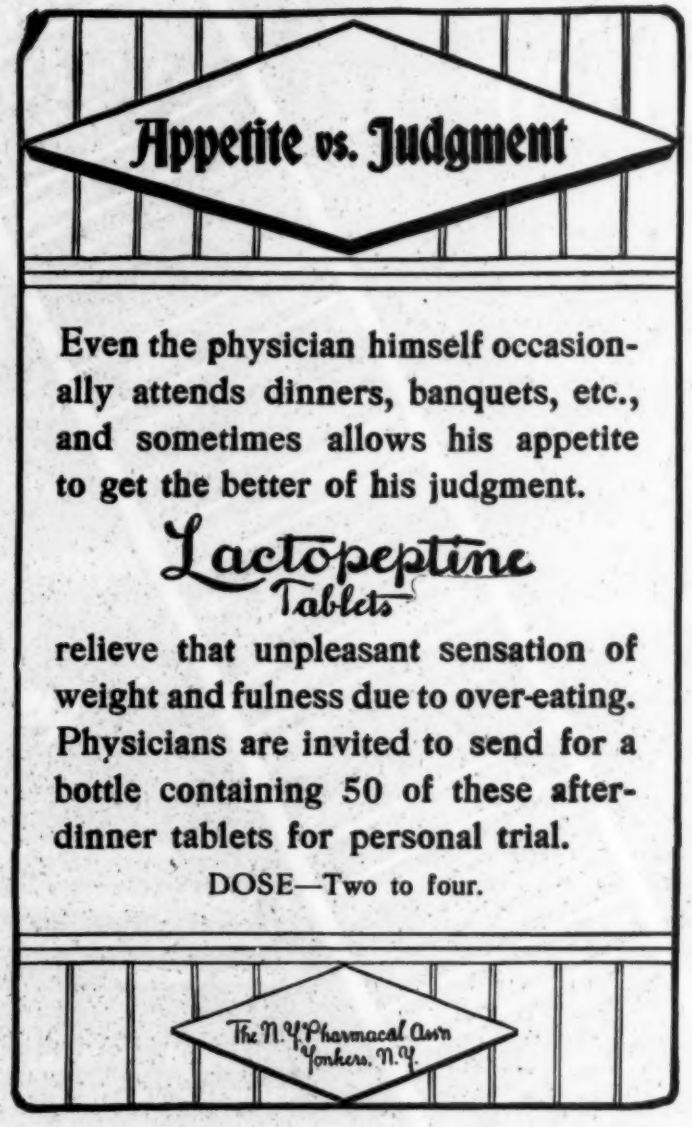
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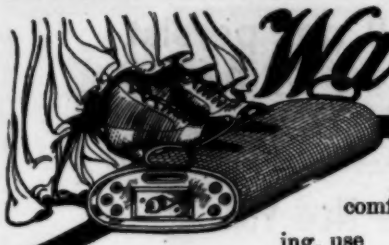

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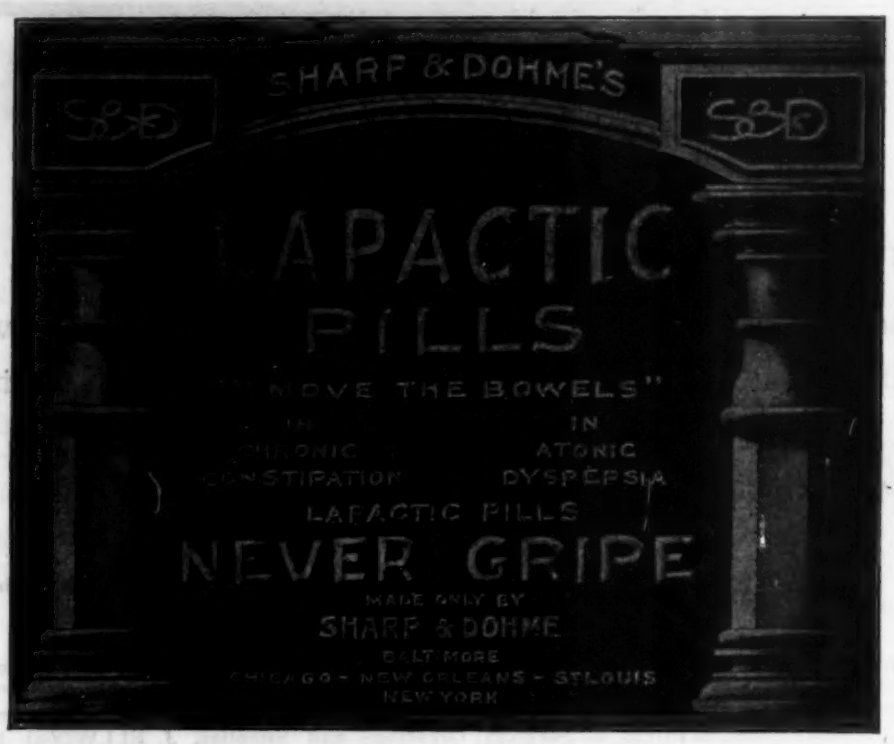

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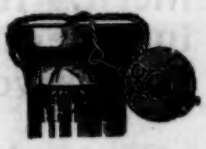

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